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ABSTRACT

Astra's Magic Math is a beginning multi-sensory program that attempts to teach basic math skills through 22 sequentially developed self-contained units designed to combine manipulation, writing, and language activities. The units are first introduced to the large group to stimulate interest and develop concepts through oral language. Children then work independently as they experiment with concepts through manipulation of objects and completion of worksheets. Motivation is stimulated through the use of "Astra," a friendly character from outer space. Astra's Magic Math includes a calculator and a computer unit for classrooms with the appropriate high technology hardware. A lesson lasts about 20-30 minutes every day and materials are provided for a 1-year program. Lessons can be used for large-group instruction, small-group enrichment, or in an individualized program. The first part of a lesson unit consists of a class discussion during which the teacher presents manipulatives. The teacher then works individually with students who need reinforcement or enrighment with their worksheets. One homework worksheet per unit is provided, and parental involvement is encouraged. (TW)

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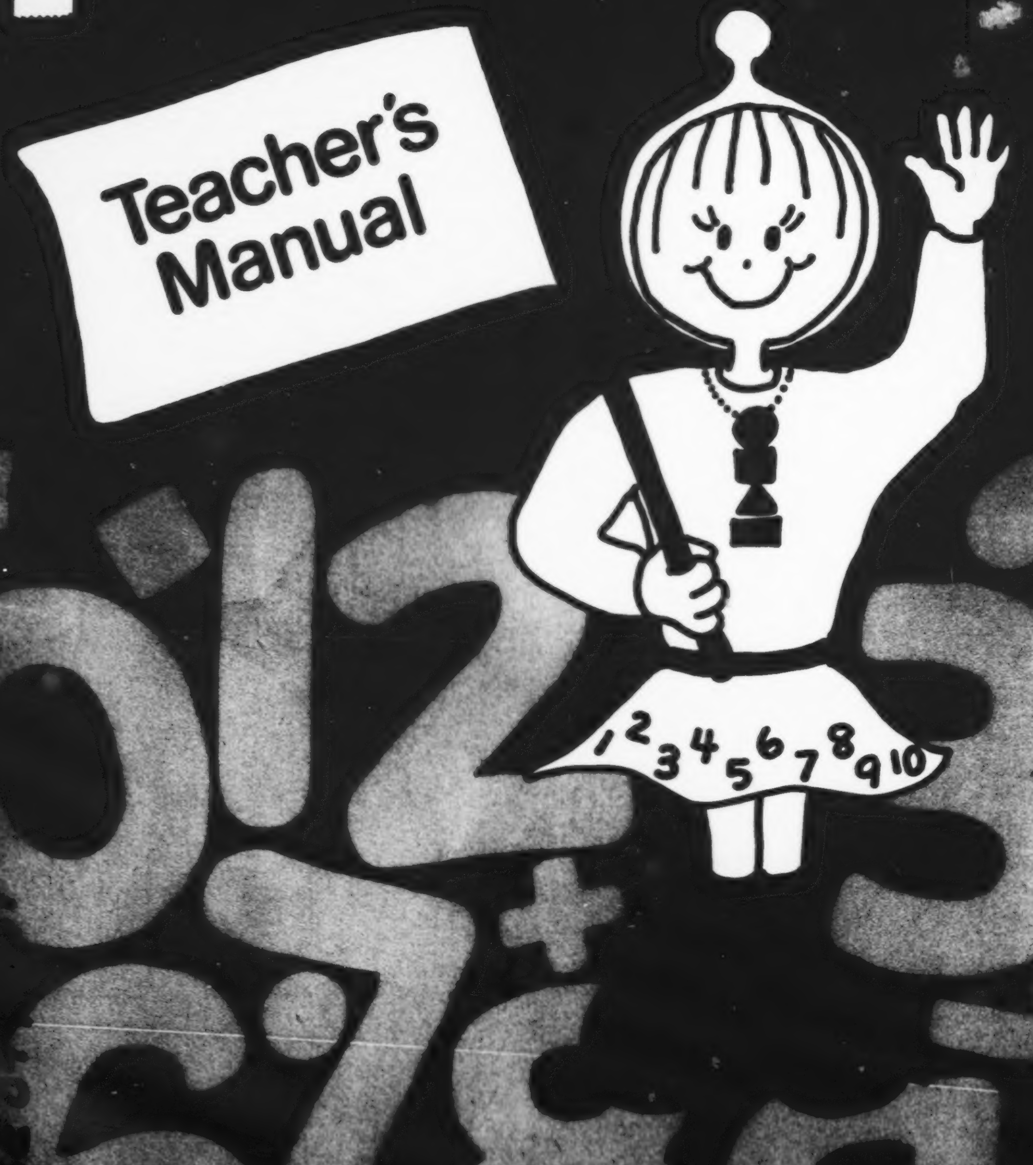
Teacher's Manual



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ASTRA'S MAGIC MATH

Teacher's Manual

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Additional Alphaphonics Publications

- Alphaphonics
- Alphaphonics One to One
- Alphaphonics Game Book
- Astro's Adventures in Reading Series
- Astro's Launch Pad
- Alphaphonics en español
- Alphaget Software

TEACHER'S MANUAL

ASTRA'S MAGIC MATH

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PROGRAM OVERVIEW

Astra's Magic Math is a beginning multi-sensory program that teaches basic math skills through sequentially developed self-contained units designed to combine manipulation, writing, and language activities. The units are first introduced to the large group to stimulate interest and develop concepts through oral language. Children then work independently as they experiment with the concepts through manipulation of objects and completion of worksheets. Motivation is stimulated through the use of "Astra," a friendly character from outer space.

Astra's Magic Math is a one year success-oriented math program employing large and small manipulatives to be used as a foundation for building math concepts. Beginning learners can also successfully participate in the technological world. Astra's Magic Math includes a calculator and a computer unit for classrooms with the proper high technology hardware (p. 57).

Astra increases achievement by promoting the acquisition of basic math skills while it helps children develop positive academic self-images. The program utilizes repetition, discovery, mystery, and memory aids. It stresses both positive reinforcement and a belief in the ability of each child to succeed. It combines frequent repetition, systematic review, and immediate correction or confirmation of children's responses with a game-like presentation of materials and a great deal of positive feedback from the teacher. The necessary repetition is made interesting by the presence of Astra, an imaginary friend from outer space. Astra's Magic Math Box, an essential program prop, contains lesson materials for the day and stimulates curiosity in the children.

A lesson lasts about 20-30 minutes every day. It can be used for large-group instruction, small-group enrichment, or in an individualized program. The first part of a lesson unit consists of a lively class discussion during which the teacher presents the manipulatives. The teacher then works individually with students who need reinforcement or enrichment with their worksheets. Astra's Magic Math does not require the use of a teacher's aide, although the use of aides allows increased individual attention to each student.

VOCABULARY INTRODUCTION

UNIT 1	Shape, circle, square, triangle, same, different, rectangle
UNIT 2	Less, more, same
UNIT 3	Short-er-est, long-er-est, big-er-est, small-er-est
UNIT 4	Zero, one, two, three, four, five, set
UNIT 5	Around, straight, down, right, across, left
UNIT 6	Above, below, between, next to
UNIT 7	Pattern, order
UNIT 8	Six, seven, eight, nine, ten
UNIT 9	Slant, curve
UNIT 10	Penny, nickel, dime, coin, cent, value
UNIT 11	Eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty
UNIT 12	Twenty-one, twenty-two, etc., to thirty, by 1's, by 10's
UNIT 13	Day, week, month, Sunday, Monday, etc., January, February, etc., calendar, today, tomorrow, yesterday, weekend
UNIT 14	By 2's, by 5's
UNIT 15	First, second, third, fourth, fifth
UNIT 16	Quarter
UNIT 17	Before, after, between
UNIT 18	Oval, diamond
UNIT 19	Clock, hour, minute, minute hand, hour hand, time
UNIT 20	Whole, half, part, full, empty
UNIT 21	Addition, plus, equals, answer
UNIT 22	Subtraction, take away, minus

PHILOSOPHY AND PROGRAM ELEMENTS

Astra's Magic Math is a success oriented program which provides total beginning basic math experience for pre-school, kindergarten or early first grade. Because children learn through success, the lessons are geared to build a child's self image and confidence. Teacher expectation plays a very important part in a child's success, and Astra's Magic Math is planned to guarantee this success.

The main objectives of this program are to learn geometric and math concepts in logical, sequential order. This evolves naturally from the emphasis on successful experiences. Astra's Magic Math uses oral language as a bridge from the concrete to the abstract. The program provides experiences through lessons which include the following key elements.

1. Lessons will be introduced in self contained units from Astra's Magic Math Manual utilizing a multi-sensory approach through manipulation, writing and language activities.

2. Motivation to be maintained through use of the Astra fantasy (Box Song, Unit Song, etc.).

3. Positive reinforcement will be used to provide for individual differences in children, including praise and badges.

4. Parents are encouraged to participate in weekly homework.

5. High expectation for children's success is used with lesson presentation.

6. Program will be utilized for at least 20-30 minutes per day at least 5 days per week.

7. Teacher will utilize oral and written lessons for student evaluation as well as basic skills development and review.

This program has been carefully devised to stimulate interest, develop independence, and satisfy the intellectual and psychological needs of young children. The lessons are designed to help children to use concrete sensory information and to build concepts through written and spoken language.

The program is designed so that the children will progress from understanding properties of tangible objects in the real world with manipulatives to the world of abstract words and symbols. As the teacher stresses the use of language at each step of the lesson the children will make the bridge from the concrete to the abstract.

As teachers use the program, they will hold high expectations for children to learn. Successful Astra's Magic Math is more than the pages that are given to the students, it is also the positive attitude and enthusiastic approach which the teacher uses in presenting these materials to the children.

PROGRAM STRUCTURE

I. MATERIALS

Astra's Magic Math materials consist of the Teacher's Manual, Student Worksheets (black line copy to be duplicated), Astra's Magic Math Box, Manipulatives (black line copy), Manipulation Bags, the Astra Doll, Introduction to Calculators, and Introduction to Computers.

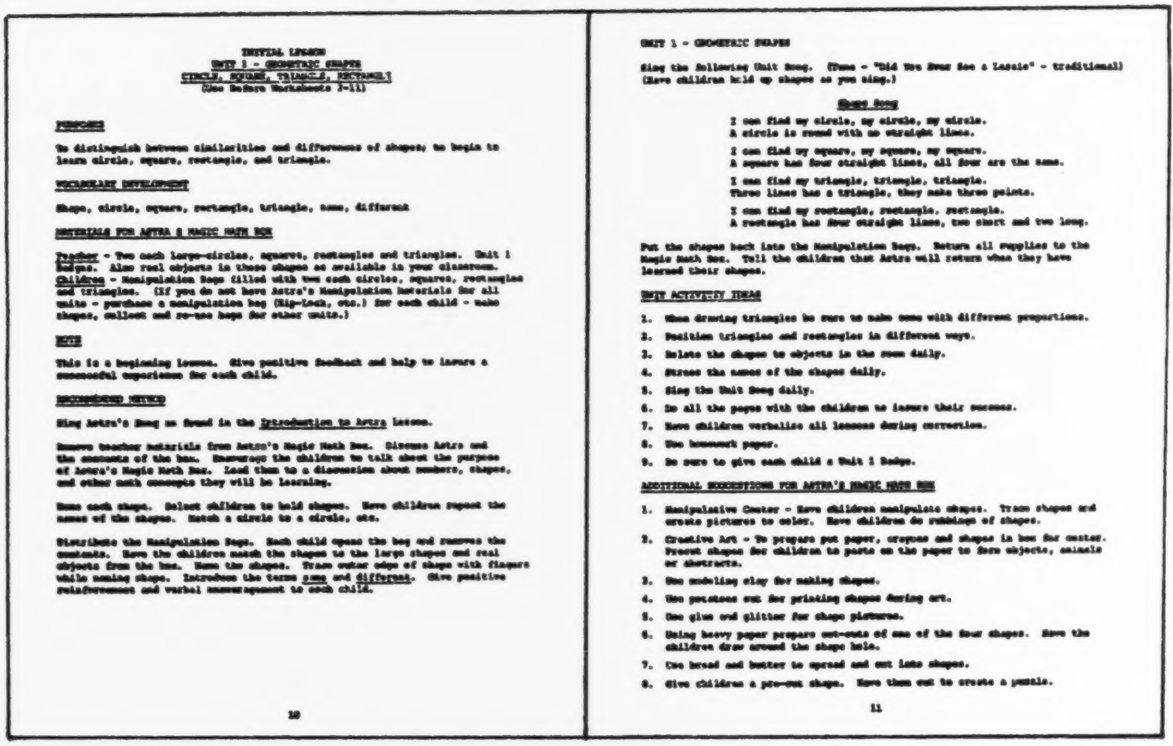
Teacher's Manual

The Teacher's Manual is organized so that each unit is introduced as a 10-30 minute Initial Lesson. The lessons each involve oral language and manipulation activities. Both the format and the content are defined in the Teacher's Manual. Each individual lesson is designed so that the teacher demonstrates the concept for the children with manipulatives. On this lesson students will verbalize as they work with manipulatives from the Manipulation Bags to practice along with the teacher.

While the manual needs to be used as a guide, it can easily be augmented with the ideas of each individual teacher.

The elements of the Teacher's Manual have been organized for maximum ease of use by utilizing the following format:

PURPOSES
VOCABULARY DEVELOPMENT
MATERIALS FOR ASTRA'S MAGIC MATH BOX
RECOMMENDED METHOD
ACTIVITY IDEAS
ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX



INITIAL LESSON
UNIT 1 - GEOMETRIC SHAPES
CIRCLE, SQUARE, TRIANGLE, RECTANGLE
(Use Before Worksheets 3-11)

PURPOSES

To distinguish between similarities and differences of shapes; to begin to learn circle, square, rectangle, and triangle.

VOCABULARY DEVELOPMENT

Shape, circle, square, rectangle, triangle, same, different

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Two each large-circles, squares, rectangles and triangles. Unit 1 Badges. Also real objects in these shapes as available in your classroom.
Children - Manipulation Bags filled with two each circles, squares, rectangles and triangles. (If you do not have Astra's Manipulation Materials for all units - purchase a manipulation bag (Zip-Lock, etc.) for each child - make shapes, collect and re-use bags for other units.)

NOTE

This is a beginning lesson. Give positive feedback and help to insure a successful experience for each child.

RECOMMENDED METHOD

Sing Astra's Song as found in the Introduction to Astra Lesson.

Remove teacher materials from Astra's Magic Math Box. Discuss Astra and the contents of the box. Encourage the children to talk about the purpose of Astra's Magic Math Box. Lead them to a discussion about numbers, shapes, and other math concepts they will be learning.

Name each shape. Select children to hold shapes. Have children repeat the names of the shapes. Match a circle to a circle, etc.

Distribute the Manipulation Bags. Each child opens the bag and removes the contents. Have the children match the shapes to the large shapes and real objects from the box. Name the shapes. Trace outer edge of shape with fingers while naming shape. Introduce the terms same and different. Give positive reinforcement and verbal encouragement to each child.

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UNIT 1 - GEOMETRIC SHAPES

Sing the following Unit Song. (Tune - "Did You Ever See a Lassie" - traditional) (Have children hold up shapes as you sing.)

Shape Song

I can find my circle, my circle, my circle.
A circle is round with no straight lines.

I can find my square, my square, my square.
A square has four straight lines, all four are the same.

I can find my triangle, triangle, triangle.
Three lines has a triangle, they make three points.

I can find my rectangle, rectangle, rectangle.
A rectangle has four straight lines, two short and two long.

Put the shapes back into the Manipulation Bags. Return all supplies to the Magic Math Box. Tell the children that Astra will return when they have learned their shapes.

UNIT ACTIVITY IDEAS

1. When drawing triangles be sure to make some with different proportions.
2. Position triangles and rectangles in different ways.
3. Relate the shapes to objects in the room daily.
4. Stress the names of the shapes daily.
5. Sing the Unit Song daily.
6. Do all the pages with the children to insure their success.
7. Have children verbalize all lessons during correction.
8. Use homework paper.
9. Be sure to give each child a Unit 1 Badge.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Manipulative Center - Have children manipulate shapes. Trace shapes and create pictures to color. Have children do rubbings of shapes.
2. Creative Art - To prepare put paper, crayons and shapes in box for center. Precut shapes for children to paste on the paper to form objects, animals or abstracts.
3. Use modeling clay for making shapes.
4. Use potatoes cut for printing shapes during art.
5. Use glue and glitter for shape pictures.
6. Using heavy paper prepare cut-outs of one of the four shapes. Have the children draw around the shape hole.
7. Use bread and butter to spread and cut into shapes.
8. Give children a pre-cut shape. Have them cut to create a puzzle.

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It is imperative to utilize the elements of the Initial Lesson of Astra's Magic Math as designed for maximum success.

The Initial Lesson pages in the Teacher's Manual prepare the children by giving them concrete experiences before they do the worksheets.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX are to be used for the augmentation of concepts through an interdisciplinary approach.

The RECOMMENDED METHOD for each unit is the lesson sequence to:

Sing Astra's Song
Open and discuss the contents of Astra's Box
Discuss Astra
Demonstrate with the teacher's materials
Have the children use the contents of their Manipulation Bags for concrete experiences
Sing the Unit Songs

The initial Astra's Song should be used at the beginning of each lesson to stimulate interest and excitement in opening Astra's Magic Math Box.

The Unit Songs help to teach the concepts of the units and to make learning fun. Praise each child's success in order to develop a positive academic self image during all parts of each lesson.

The UNIT ACTIVITY ideas are additional suggestions to utilize during the remainder of the unit with the worksheets.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX are to be used for the augmentation of concepts through an inter-disciplinary approach.

Student Worksheets are designed to give practice with the Math unit concepts after the Initial Lesson in the Teacher's Manual. Teacher instructions are provided at the bottom of each lesson. Lessons will normally take 20 to 30 minutes. Each child's paper should be individually corrected as completed. Be sure to have the child verbalize concepts learned on worksheet. Give immediate praise and help child to correct errors.

Astra's Magic Math Box is designed to help create mystery, excitement and enthusiasm for all lessons. The Manual suggests many materials to be placed in Astra's Magic Math Box. Do not feel limited by these suggestions. Feel free to use your own creative ideas for additional materials to be placed in Astra's Magic Math Box.

Children's Manipulation Bags are to be self closing plastic bags. It is imperative for young children to manipulate concrete objects in developing mathematical skills and concepts.

II. ASTRA

Astra increases children's oral language, motivation and creativity and fosters the teacher's creativity as well. Astra, an imaginary invisible character from outer space, is a girl with "magical math powers" whose purpose is to help children learn math concepts. She materializes on the worksheets and in the form of a 30" doll. She is a character who is happy, sad, frustrated, puzzled, curious, and angry in whom children can identify with their own feelings.

III. POSITIVE REINFORCEMENT

Positive Reinforcement is ongoing in group and individual activities. Children should be praised for success. It is also educationally valuable to praise children who work hard but may not have the "right answer." These children need to be encouraged through positive reinforcement for their efforts.

Correct papers at the completion of each lesson as you immediately praise the work. Be sure this is done on a one-to-one basis. Additional reinforcement may be in the form of tangible rewards such as Astra's Happy Faces or stars. Assist children who are having difficulty, then praise them and give appropriate positive reinforcement to each child.

At the successful conclusion of each math unit and homework assignment Astra's Badge can be awarded to each child. Astra's Badges are found in the Student Worksheet materials.

IV. HOMEWORK/PARENT INVOLVEMENT

One homework worksheet for each unit will be found in the Student Worksheet - Homework section.

Program Introduction letter and Homework letter are found in Student Worksheet - Homework section.

The weekly homework assignment has two important related goals. For the child the activity serves to reinforce/enrich at home the concepts introduced by the teacher. For the parents, it creates a structured activity and valuable opportunity for parental participation in the program.

The homework/parental involvement component is initiated through parental/ teacher communication. The program introduction letter is sent and a parent orientation meeting is held to discuss the program philosophy, content, and to model a homework assignment. The letter regarding homework is sent with the first homework paper. Importantly, through the teacher, parents can learn that they are indeed co-teachers in the learning process.

For the child the homework provides an opportunity for additional guided practice and/or independent learning. The homework emphasis will depend on the conceptual development of the child and will change as the child progresses but should always include having the child verbalize the work.

V. HIGH EXPECTATIONS

The philosophy of Astra's Magic Math is that all children can learn! The teacher, as the facilitator of that learning, will praise each child's success daily and give tangible rewards.

Since children come to us with varied backgrounds and abilities, we take them where they are and advance them as far as they can go on the continuum of learning, building a positive academic self image each step of the way.

VI. TYPICAL SCHEDULE

Astra's Magic Math will normally take 20-30 minutes for daily lessons. Materials are provided for a one year program.

There are two types of lessons, the Initial Lesson with manipulatives and the Follow up Lesson with the daily worksheets for independent guided practice.

Follow up Lessons for each unit will be completed over a span of one to two weeks. Most units have eight worksheets. A few units will have more.

Lessons may be used by small groups, large groups, or individual students as desired by the teacher in meeting the needs of the children.

VII. EVALUATION

Astra's Magic Math allows the teacher to continually monitor and check for understanding of the math concepts. Oral and written lessons are each used for daily evaluation of student progress.

Initial lessons will provide feedback to the teacher as the children respond by naming and manipulating objects, talking, singing, tracing, and writing.

The worksheets provide additional guided practice which can be monitored by the teacher. As the children verbalize about the homework and worksheets the teacher can check further for understanding.

Astra's Badges may be used not only as an award but as a Unit Mastery Test when the children respond independently to the question on each of the badges.

CORRELATION OF ASTRA'S MAGIC MATH AND ASTRO'S ALPHAPHONICS

For teachers who already use the Alphaphonics Beginning Reading program Astra is Astro's sister who has come to earth to help children learn math. She provides for the same high expectation, motivation, and success which teachers have experienced with Astro.

Alphaphonics provides teachers with well organized materials to teach beginning reading. Astra's Magic Math continues with the same basic philosophy and structures.

When presenting the Astro lessons, teachers may wish to correlate with Astra's Math Units, i.e., when teaching the "E" lesson, which has various shapes on the engine, refer to the Shape unit which Astra provides.

The children will discover that Astro's Badges are used for counting pictures in Astra's Math number units.

INTRODUCTION TO ASTRA

PURPOSES

To stimulate enthusiasm for all Astra lessons
To stimulate conversation and imagination

VOCABULARY DEVELOPMENT

Outer space, invisible

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Copy of Introduction to Astra Picture (page 1) for each child.

RECOMMENDED METHOD

Be enthusiastic! Have fun!

Pass out the Astra picture to the children. Tell them that you have a big surprise. Let them guess what they think it is. Ask, "What kind of a girl do they see on this page?"

After some discussion, tell the children, "This is Astra! She is an invisible, friendly girl from outer space who comes to our classroom every day."

NOTE: (You may want to suggest that the class fix a chair for Astra to sit on when she visits. Let them decorate and label this place of honor.)

Continue the discussion. "Boys and girls look at Astra's hands. Can you guess what she has? What do you see on the flag? What do you think she is going to teach us?" Lead the children to discover that Astra will help them to learn about numbers and shapes.

"We will take many surprises out of her box. Everything in her box will help us learn about shapes and numbers. When we learn to work with the numbers, we will be able to add and subtract and do many exciting things with numbers."

"If you color this page beautifully, Astra will be so happy that she'll bring you a surprise tomorrow." (Astra's Box and materials for the day's lesson constitute this surprise.)

Each day begin by singing "Astra's Song" the theme song of Astra's Magic Math. (Tune - "Twinkle, Twinkle, Little Star" - traditional)

Astra's Song

Astra is my magic friend
We are friends until the end.
I will learn my math each day
I will learn it as I play.

Astra's Box has a big surprise
Now's the time to use my eyes
Lift the lid and open wide
I wonder what I'll find inside.

INITIAL LESSON
UNIT 1 - GEOMETRIC SHAPES
CIRCLE, SQUARE, TRIANGLE, RECTANGLE
(Use Before Worksheets 2-11)

PURPOSES

To distinguish between similarities and differences of shapes; to begin to learn circle, square, rectangle, and triangle.

VOCABULARY DEVELOPMENT

Shape, circle, square, rectangle, triangle, same, different

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Two each large-circles, squares, rectangles and triangles. Unit 1 Badges. Also real objects in these shapes as available in your classroom.
Children - Manipulation Bags filled with two each circles, squares, rectangles and triangles. (If you do not have Astra's Manipulation Materials for all units - purchase a manipulation bag (Zip-Lock, etc.) for each child - make shapes, collect and re-use bags for other units.)

NOTE

This is a beginning lesson. Give positive feedback and help to insure a successful experience for each child.

RECOMMENDED METHOD

Sing Astra's Song as found in the Introduction to Astra lesson.

Remove teacher materials from Astra's Magic Math Box. Discuss Astra and the contents of the box. Encourage the children to talk about the purpose of Astra's Magic Math Box. Lead them to a discussion about numbers, shapes, and other math concepts they will be learning.

Name each shape. Select children to hold shapes. Have children repeat the names of the shapes. Match a circle to a circle, etc.

Distribute the Manipulation Bags. Each child opens the bag and removes the contents. Have the children match the shapes to the large shapes and real objects from the box. Name the shapes. Trace outer edge of shape with fingers while naming shape. Introduce the terms same and different. Give positive reinforcement and verbal encouragement to each child.

UNIT 1 - GEOMETRIC SHAPES

Sing the following Unit Song. (Tune - "Did You Ever See a Lassie" - traditional) (Have children hold up shapes as you sing.)

Shape Song

I can find my circle, my circle, my circle.
A circle is round with no straight lines.

I can find my square, my square, my square.
A square has four straight lines, all four are the same.

I can find my triangle, triangle, triangle.
Three lines has a triangle, théy make three points.

I can find my rectangle, rectangle, rectangle.
A rectangle has four straight lines, two short and two long.

Put the shapes back into the Manipulation Bags. Return all supplies to the Magic Math Box. Tell the children that Astra will return when they have learned their shapes.

UNIT ACTIVITIY IDEAS

1. When drawing triangles be sure to make some with different proportions.
2. Position triangles and rectangles in different ways.
3. Relate the shapes to objects in the room daily.
4. Stress tha names of the shapes daily.
5. Sing the Unit Song daily.
6. Do all the pages with the children to insure their success.
7. Have children verbalize all lessons during correction.
8. Use homework paper.
9. Be sure to give each child a Unit 1 Badge.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Manipulative Center - Have children manipulate shapes. Trace shapes and create pictures to color. Have children do rubbings of shapes.
2. Creative Art - To prepare put paper, crayons and shapes in box for center. Precut shapes for children to paste on the paper to form objects, animals or abstracts.
3. Use modeling clay for making shapes.
4. Use potatoes cut for printing shapes during art.
5. Use glue and glitter for shape pictures.
6. Using heavy paper prepare cut-outs of one of the four shapes. Have the children draw around the shape hole.
7. Use bread and butter to spread and cut into shapes.
8. Give children a pre-cut shape. Have them cut to create a puzzle.

INITIAL LESSON
UNIT 2 - ONE-TO-ONE MATCHING
(Use Before Worksheets 12-19)

PURPOSE

To develop skill in one-to-one matching as a prerequisite for counting.

VOCABULARY DEVELOPMENT

Less, more, same

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Five books, four crayons, three pencils, two erasers. Unit 2 Badges.
Children - Manipulation Bags filled with five rectangles, four squares, three triangles and two circles.

RECOMMENDED METHOD

Sing Astra's Song as found in the Introduction to Astra lesson. Discuss Astra and the contents of the box. Relate the discussion to learning to count objects.

Match the books to the crayons. Discuss the fact that there are more books than crayons and less crayons than books. Remove one book. Note that you now have the same number of books and crayons. Repeat the procedure several times using the books, crayons, pencils and erasers.

Distribute the Manipulation Bags. Have the children remove the shapes. Use the same procedure as you did with the books, crayons, pencils and erasers for the different shapes in the bags. Stress the terms more, less and same. Give positive reinforcement and verbal encouragement to each child. Sing the following Unit Song. (Tune - "Mary Had A Little Lamb" - traditional.)

More, Less and Same

Sometimes I have more than you, more than you, more than you.
Sometimes I have less than you.
Sometimes we have the same.

Put the shapes back into the Manipulation Bags. Return all supplies to the Magic Math Box. Tell the children that Astra will return when they have learned one-to-one matching.

UNIT ACTIVITY IDEAS

1. Relate the one-to-one concept to daily activities in the room, such as when supplies are distributed to children.
2. Sing the Unit Song daily.
3. Do all the pages with the children to insure their success.
4. Use homework paper.

5. Be sure to give each child a Unit 2 Badge when unit is completed.
6. Be positive with all children for all lessons. Have children verbalize all lessons.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Match shoes to socks.
2. Graphing works well to reinforce this Unit's Concept. For instance, graph all black shoes, tie shoes, brown shoes, lacing shoes, etc.
3. Use pencils and erasers, chalk and erasers, nuts and bolts, and jars and caps, etc. for one-to-one matching reinforcement.

INITIAL LESSON
UNIT 3 - SIZE COMPARISON
(Use Before Lessons 20-27)

PURPOSES

To learn math vocabulary and to develop size comparison concepts.

VOCABULARY DEVELOPMENT

Short, shorter, shortest; long, longer, longest; big, bigger, biggest; small, smaller, smallest.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Three pencils (short, shorter, shortest; long, longer, longest; three books (big, bigger, biggest; small, smaller, smallest). Unit 3 Badges.
Children - Manipulation Bags filled with different size rectangles.

RECOMMENDED METHOD

Sing Astra's Song as found in the Introduction to Astra lesson. Remove all contents from the box. Discuss Astra and the contents of the box. Stress short, shorter, shortest, big, bigger, biggest, small, smaller, smallest, long, longer, longest for objects from box. Have children use their bodies to become long, short, etc., comparative sizes.

Distribute the manipulation bags. Each child opens the bag and removes the rectangles and places them in order of size. Discuss big, bigger, biggest, small, smaller, smallest. Give positive reinforcement and verbal encouragement to each child.

Repeat procedure for vocabulary of short, etc., long, etc. Sing the following Unit Song. (Tune - "Twinkle, Twinkle Little Star.") (Demonstrate with your hands - have children do the same.)

Big and Small, Short and Long

Some books are big,
Some books are small.
Some toys are big.
Some toys are small.
Big and small, big and small.
See me make a big, big ball.

Some snakes are short.
Some snakes are long.
Some worms are short.
Some worms are long.
Short and long, short and long.
See me make a snake so long.

Return materials to manipulation bags and "Astra's Magic Box."

Tell the children that Astra will return when they have learned their new words.

UNIT 3 - SIZE COMPARISON

UNIT ACTIVITY IDEAS

1. Relate sizes to objects in room daily.
2. Stress vocabulary daily.
3. Repeat Unit Song daily.
4. Do all pages with children to insure success. Have children verbalize all lessons.
5. Use homework paper.
6. Be sure to give each child the Unit's Badge when unit is mastered.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Put chalk in box. Use chalkboard to have children draw long, longer, longest lines, etc.
2. Put supplies for paper chains in box. Make paper chains of comparative sizes.
3. Find additional sets of three different size objects for box, i.e., plates from playhouse, blocks, etc.
4. Bake three different size cakes for comparison purposes. Use tiered pans if available.

INITIAL LESSON

UNIT 4 - COUNTING AND RECOGNIZING 0-5

(Use Before Lessons 28-35)

PURPOSES

To teach recognition of numbers and the concept of sets 0-5.

VOCABULARY DEVELOPMENT

Zero, one, two, three, four, five, set; review of more, less, same.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards with numbers 0,1,2,3,4,5. Large cards with sets of pictures 0-5. Unit 4 Badges.
Children - Manipulation Bags filled with five objects; six small cards numbered 0-5; six small picture cards 0-5.

RECOMMENDED METHOD

Sing Astra's Song. Remove teacher materials from the box. Discuss Astra and the contents of the box. Display 0 cards and set cards. Discuss what zero means. Repeat for 1-5. Have one child hold 0 number card. Select another child to find 0 set card. Repeat for other numbers. Match number and picture cards.

Remove and distribute Manipulation Bags. Each child opens bag and removes objects, picture and number cards. Discuss zero means none. Then proceed with 1-5 having children place correct number of objects under each number card. Count picture cards and match with number cards. Praise each child as each card and objects are matched.

Sing Unit Song. (Tune - "Twinkle, Twinkle, Little Star.")

Counting to Five

Zero, one, two, three, four, five.
I'm so glad that I'm alive.
Counting is such fun to do.
I can count and so can you.

Tell the children that Astra will return when they have learned 0,1,2,3,4,5.

UNIT ACTIVITY IDEAS

1. Make sure each child orally counts objects to teacher as worksheets are corrected.
2. Relate vocabulary concepts to objects in room daily.
3. Stress vocabulary daily by use of Unit Song.

4. Do all pages with children to insure success.
5. Use homework paper.
6. Be sure to give each child a Unit 4 Badge when unit is mastered.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use milk cartons, paper cups, etc. filled with small objects and have children count out number of objects with the cards from their manipulation bags.
2. Use old magazines, etc. to create individual number books from 0-5.
3. Use balls to bounce the correct number of times.
4. Put number games in box to be used for centers, etc.
5. Count the number of gray hairs on the teacher's head.

INITIAL LESSON
UNIT 5 - WRITING 0-5
(Use Before Lessons 36-43)

PURPOSE

To learn to write numbers 0-5.

VOCABULARY DEVELOPMENT

Around, straight, down, right, across, left.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards with numbers 0,1,2,3,4,5. Large cards with sets of pictures 0-5. Unit 5 badges.
Children - One slate, chalk for each child or pencil and paper. Manipulation Bags with 5 objects.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box. Remove and display teacher materials. Review concepts for 0-5. Children arrange in numerical order. Match number and picture cards.

Remove and distribute Manipulation Bags. Remove objects. Teacher demonstrates writing 0. Children write 0 on slate or paper. Repeat for other numbers. Praise each child as numbers are written. Count out correct number of objects for each number. Sing Unit Song. (Tune - "Twinkle, Twinkle" - traditional.) Emphasize direction through body movement with songs.

Writing

Zero, one, two, three, four, five.
I'm so glad that I'm alive.
Writing is such fun to do.
I can write and so can you.

0 - Around in a circle
We must go.
Just to make
A nice zero.

1 - Straight line down to make a one.
I am having lots of fun.

2 - Around to the right.
Make a witch's nose.
Straight line across
That's how two goes.

3 - Bump to the right.
Bump to the right.
Threes are fun.
Day or night.

4 - Down, across, lift,
Straight line down.
Write four now and
Don't you frown.

5 - Line to the left.
Go straight down.
Five has the fattest tummy
In town.

Tell children that Astra will return when they have learned to write zero, one, two, three, four and five.

UNIT ACTIVITY IDEAS

See Unit 4 Activity Ideas.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use corn starch or cornmeal and baking pan for finger number writing.
2. Use textured cards for number identification. Trace with eyes closed.
3. Glue small beans on large numbered cards for kinesthetic reinforcement. Make sure children follow correct number writing direction and formation.
4. Use paint brushes and water outside to practice number writing.
5. Have children finger write on each other's back to make the numbers. Try to guess what is being written. Let them write the number, on slate or paper, after their buddy has written it on their back.

INITIAL LESSON
UNIT 6 - SPATIAL RELATIONSHIPS
LEFT/RIGHT, ABOVE/BELOW, BETWEEN/NEXT TO
(Use Before Lessons 44-51)

PURPOSES

To learn math vocabulary and to develop concepts of spatial and directional relationships.

VOCABULARY DEVELOPMENT

Above, below, next to; review left, right.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Book, rule, eraser, pencil, record, paint brush or any other readily available classroom objects. Unit 6 Badges.
Children - Manipulation Bags, one per child, with one square, one circle, one triangle, and one rectangle.

RECOMMENDED METHOD

Sing Astra's Song. Remove classroom objects from box. Discuss Astra and the contents of the box. Emphasize vocabulary terms. Demonstrate concepts with the various objects. Left-right, above-below, between-next to.

Distribute Manipulation Bags. Each child opens the bag and removes the shapes. Continue the lesson using the shapes to introduce unit vocabulary. Have children demonstrate concepts. Give positive reinforcement and verbal encouragement to each child.

Sing Unit Song (Tune - "Happy Birthday" - traditional). (Have children act out words - teacher demonstrates.)

Direction

Please step to the left.
Please step to the right.
Left, right, left, right,
I can do it day and night.

Left hand above the table.
Right hand below the table.
Above, below, above, below
Look and see what I know.

Place your head between your hands.
Place your hands next to your head.
Listen, listen, dear Astra,
Listen to what I said.

Now point to the left.
Now step to the left.
Now point to the right.
Now step to the right.

Tell the children that Astra will return when they have learned their new math words.

UNIT ACTIVITY IDEAS

See Unit 4 Activity Ideas.

Also, be sure to let each child verbalize before and after worksheets are completed.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Reinforce vocabulary through demonstration with felt board shapes.
2. Put Astra's picture in the box. Then, have Astra move according to the vocabulary words. Have children place themselves above, below objects in the room.
3. Put large block in box for use by the children for vocabulary development.
4. Put perceptual cards in box. Have children follow directions.
5. Use peanut butter and jelly sandwich making activity to develop vocabulary.

INITIAL LESSON
UNIT 7 - PATTERNING
(Use Before Lessons 52-59)

PURPOSES

To develop skill in patterning as a prerequisite to abstract thinking. To review short, long, big, etc. from Unit 3. To review circle, square, triangle, and rectangle.

VOCABULARY DEVELOPMENT

Pattern, order.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Three each - circles, squares, triangles, and rectangles. Unit 7 Badges.
Children - Manipulation bag with circles, squares, triangles and rectangles.

RECOMMENDED METHOD

Sing Astra's Song. Remove geometric shapes from box. Discuss Astra and the contents of the box. Emphasize vocabulary. Review circle, square, triangle and rectangle. Have four children come to the front. Have each child hold one shape - a circle, a rectangle, a circle, a rectangle. Ask, "What is the pattern?" Ask, "What is the order of these shapes?" Hold up a circle and a rectangle and have children decide what comes next. Repeat this procedure with all shapes to develop concept. Pattern the shapes by using above procedure. Have children line up boy, boy, girl, etc.

Remove and distribute Manipulation Bags. Have children remove shapes from bags. Use procedure used in above section for patterning the order of the shapes. Stress patterning. Give positive reinforcement and verbal encouragement to each child.

Teach the following Unit Song. (Tune - "Did You Ever See a Lassie?" - traditional.)

Pattern

I can make a pattern, a pattern, a pattern
I can make a pattern.
In order it goes.

Tell the children that Astra will return when they have learned how to pattern.

UNIT ACTIVITY IDEAS

1. As appropriate let children establish their own color pattern on the worksheets with one or two attributes.
2. When completing worksheets, have children verbalize (chant) pattern as needed.

3. Use a tapping pattern for children to follow. If a 2 attribute pattern, demonstrate with tap-pause. Continue with other patterns, i.e., clap-snap or stamp-clap.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Put in 3 pencils, 3 erasers, 3 rulers. Practice patterning. Place in a learning center if you wish.
2. Use colored macaroni for patterning necklaces.
3. Put in 2 sets of 3 different sized blocks and patterns by size.
4. Use modeling clay. Give children 2 colors to work at center to make their own patterns.
5. Put in shape cards. Line up in patterns on chalkboard. Study. Turn over and try to remember pattern. Memory Game.

NOTE: If children have difficulty when working with 2 or more attributes, return to 1 attribute.

INITIAL LESSON
UNIT 8 - COUNTING AND RECOGNIZING 6-10

(Use Before Lessons 60-67)

PURPOSES

To recognize numbers and the concept of sets 6-10.

VOCABULARY DEVELOPMENT

Six, seven, eight, nine, ten.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards for numbers 6,7,8,9.10. Large cards with pictures 6-10. Unit 8 Badges.
Children - Manipulation Bag with ten objects, five small cards numbered 6-10, small picture cards 6-10.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box. Remove large number and picture cards. Display cards. Discuss what 6 means. Repeat for 7-10. Have one child hold the 6 number card. Select another child to find the 6 set card. Repeat matching the other numbers.

Remove and distribute Manipulation Bags. Each child opens bag and removes 10 objects, picture number cards. Discuss 6. Then proceed with 7-10. Have children place correct number of objects under each number card. Count picture cards and match with number cards. Praise each child as cards and objects are matched. Sing Unit Song. (Tune - "Twinkle, Twinkle" - traditional.)

Counting to Ten

Zero, one, two, three, four, five,
I'm so glad that I'm alive.
Six, seven, eight, nine, ten,
This is fun to do again.

Tell the children that Astra will return when they have learned to count from 6-10.

UNIT ACTIVITY IDEA

1. Make sure each child orally counts objects and names numbers to teacher as worksheets are corrected.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use dot to dot books. Ditto extras as desired.
2. Use milk cartons, etc. filled with small objects and have children count out number of objects to match with cards from their manipulation bag.

UNIT 8 - COUNTING AND RECOGNIZING 6-10

3. Ball bouncing - Hold up a number card and have child bounce ball.
4. Use old magazines, etc. to create individual number booklets from 6-10.
5. Put number games in box to be used for center, etc.
6. Teach song, "This Old Man."

INITIAL LESSON
UNIT 9 - WRITING 6-10
(Use Before Lessons 68-75)

PURPOSES

To learn to write 6-10.

VOCABULARY DEVELOPMENT

Slant, curve; review down, around, straight across, left, right.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards with numbers 6,7,8,9,10. Large cards with sets of pictures 6-10. Unit 9 Badges.
Children - Manipulation Bags with ten objects. Also each child needs 1 slate and chalk or pencil and paper to write numbers.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box. Remove and display large number and picture cards. Review concepts 6-10. Children arrange them in numerical order using picture cards for matching.

Remove and distribute Manipulation Bags. Remove 10 objects. Teacher demonstrates writing 6. Children write 6 on slate or paper. Repeat for other numbers. Praise each child as numbers are written. Count out correct amount of objects for each number.

Sing Unit Song. (Tune - "Twinkle, Twinkle" - traditional.) Emphasize direction through body movement with songs.

Writing to Ten

Zero, one, two, three, four, five.
I'm so glad that I'm alive
Six, seven, eight, nine, ten,
Writing is fun to do again.

6 - Down and around to make a six
This is one of my best tricks.

7 - Straight across and slant line down.
Seven is fun, don't you frown.

8 - Make an S, for an eight
Curve around as you skate.

9 - Circle to the left, now close it tight
Slant line down, makes nine just right.

10 - Make a one and then a zero,
I wrote ten so I'm a hero.

UNIT 9 - WRITING 6-10

Tell children that Astra will return when they have learned to write six, seven, eight, nine and ten.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use corn starch or cornmeal and baking pan for finger writing.
2. Use textured cards for number identification. Trace with eyes closed.
3. Glue small beans on large number cards for kinesthetic reinforcement. Make sure children follow correct number writing direction and formation.
4. Use paint brushes and water outside to practice number writing
5. Have children finger write on each other's backs to make the numbers. Try to guess what is being written. Let them write the number on slate or paper after their buddy has written it on their back.

INITIAL LESSON
UNIT 10 - MONEY
PENNIES, NICKELS AND DIMES
(Use Before Lessons 76-83)

PURPOSES

To learn to recognize the value of pennies, nickels and dimes.

VOCABULARY DEVELOPMENT

Penny, nickel, dime, coin, cent, value.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Pictures of toys and other objects on large cards, price tags, i.e., 10¢, real coins (10 pennies, 2 nickels, 1 dime). Unit 10 Badges.
Children - Manipulation Bags with coin cards, play coins or real coins (10 pennies, 2 nickels, 1 dime), one small toy.

RECOMMENDED METHOD

Sing Astra's Song. Remove and display large cards and real or play coins. Discuss Astra and the contents of the box. Review concept of counting 1-10. Talk about a penny having a value of one cent; a nickel five cents, and/or five pennies; dime ten cents and/or ten pennies or two nickels. Using large cards have child come to front of group and help to figure out what coins would buy the object on each card using price tags. Use a different child for each card. Discuss the meaning of coins - pennies, nickels and dimes are all coins.

Remove and distribute Manipulation Bags. Have each child remove coins and toy from bag. Pretend the toy costs 1 cent. Have children count 1 penny. Repeat for 2¢, 3¢, and 4¢. Then pretend toy costs 5 cents. Count 5 pennies, then 1 nickel. Explain that 5 pennies have the same value as 1 nickel.

Praise the children as you continue with the lesson. Then say the toy now costs 6 cents. Count out six pennies. Then determine that toy could be bought for one nickel and one penny. Repeat for 7¢, 8¢ and 9¢. Then pretend the toy costs 10¢. Count 10 pennies. Then count two nickels; count 1 nickel and five pennies. This is to give children an overview. Do not expect them to thoroughly understand the concept at this time.

Sing Unit Song. (Tune - "Mary Had a Little Lamb" - traditional.)

Penny, Nickel and Dime

I have a penny, nickel and dime,
Nickel and dime, nickel and dime.

I have a penny, nickel and dime
To buy a little toy.

A penny is the same as one cent.
Same as one cent.
Same as one cent.
A penny is the same as one cent
I can buy some gum.

A nickel is the same as five pennies.
Same as five pennies.
Same as five pennies.
A nickel is the same as five pennies.
I can buy some candy.

Any ten pennies make a dime.
Make a dime.
Make a dime.
Any ten pennies make a dime.
Find another way

Any two nickels make a dime.
Make a dime.
Make a dime.
Any two nickels make a dime.
Find another way.

A nickel and five pennies make a dime.
Make a dime.
Make a dime.
A nickel and five pennies make a dime.
We're having fun today.

Tell the children that Astra will return when they have learned about pennies, nickels and dimes.

UNIT ACTIVITY IDEAS

1. It is necessary for the teacher to have one set of real coins for demonstration purposes. For concrete experience have each child bring ten pennies, two nickels and one dime to put in Manipulation Bags for daily use with priced objects.
2. Be sure to stress that cent and penny have the same meaning.
3. Frequent experience in actual counting of coin combinations is important.
    - Use 10 pennies, 2 nickels. Have children make comparisons, i.e., 5 pennies equals 1 nickel, etc.
    - Use 10 pennies, 1 dime, and match as above (paper or real).
    - Use 10 pennies, 2 nickels, 1 dime to practice combinations.
    - Use pictures of objects with price tags plus 10 pennies, 2 nickels, 1 dime.

UNIT 10 - MONEY

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Put in grocery store items with price tags and match money for purchase.
2. Repeat number 5 for post office.
3. Put in a good film strip on money.

NOTE: You may wish to point out that a penny has Abraham Lincoln on one side, the Lincoln Memorial on the other. The nickel has Thomas Jefferson on one side and his home, Monticello, on the other. The dime varies.

INITIAL LESSON
UNIT 11 - COUNTING, RECOGNIZING AND WRITING 11-20
(Use Before Lessons 84-91)

PURPOSES

To count, recognize, and write number sets 11-20.

VOCABULARY DEVELOPMENT

Eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen and twenty.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards with numbers, 11-20. Large cards with groups of pictures 11-20. Slates with chalk or pencil and paper (1 set per child). Unit 11 Badges.
Children - Manipulation Bags with 20 objects each.

RECOMMENDED METHOD

Sing Astra's Song. Remove and display large cards. Discuss Astra and the contents of the box. Display card for 11. Discuss what 11 means. Stress it is one more than ten. Repeat for 12-20. Match picture cards with appropriate number cards.

Distribute Manipulation Bags and slates or paper. Remove objects. Teacher demonstrates writing 11. Children write 11 on slate or paper. Children count 11 objects. Repeat for other numbers. Praise each child as numbers are written and for correct counting. Have children count objects with a partner.

Sing Unit Song (Tune - "Mary Had A Little Lamb" - traditional).

Counting

Learning from eleven to twenty is fun.
Learning is fun.
Learning is fun.
Counting from eleven to twenty is fun.
Come and count with me.

Tell the children that Astra will return when they have learned their numbers from 11-20.

UNIT ACTIVITY IDEAS

1. On papers, it is helpful to let the children mark small objects as they count. This eliminates counting twice and leaving out objects and helps to insure success.

UNIT 11 - COUNTING, RECOGNIZING AND WRITING 11-20

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use dot to dot dittos.
2. Use containers with small objects and have children count out number of objects to match with cards from Manipulation Bag.
3. Use calendar pages from old calendars to locate numbers to twenty.
4. Use old catalogs or workbooks to create individual number booklets 11-20.
5. Put number games in box to use for centers.
6. Use beads and number cards 11-20. String the correct number of beads to match each card.

INITIAL LESSON
UNIT 12 - COUNTING, RECOGNIZING AND WRITING 1-30 BY 1'S AND 10'S

(Use Before Lessons 92-99)

PURPOSES

To count, recognize and write numbers and sets 1-30 by 1's and 10's.

VOCABULARY DEVELOPMENT

Twenty-one, twenty-two, etc. to thirty, by 1's , by 10's

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large cards for numbers 1-30. Large cards with pictures 1-30. Slates and chalk or paper and pencil. Unit 12 Badges.
Children - Manipulation Bags with 30 objects each.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box. Remove large number cards and picture cards. Display cards. Count 1-20. Discuss what 21 means. Stress it is one more than 20. Repeat for 22-30. Match set cards with appropriate number cards. Count by 10's from 10-30.

Distribute Manipulation Bags. Remove 30 objects. Teacher demonstrates writing 21. Children write 21 on slate or paper. Repeat for other numbers. Praise each child as numbers are written. Count and take out correct amount of objects for each number. Count by 1's and 10's.

Sing Unit Song (Tune - "Skip to My Lou" - Traditional).

Counting

Counting from one to thirty is fun
Counting from one to thirty is fun
Counting from one to thirty is fun
Come and count with me.

I can count 10, 20, 30
I can count 10, 20, 30
I can count 10, 20, 30
Come and count with me.

Tell the children that Astra will return when they have learned to count from 21-30.

UNIT ACTIVITY IDEA

1. When more practice is needed, use lined paper to write from 1-30.

UNIT 12 - COUNTING, RECOGNIZING AND WRITING 1-30

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Give each child a set of number cards 1-30 for numerical ordering game.
2. Using old junk jewelry, place several necklaces or bracelets in box. Count the number of beads.
3. Paper strips. Use for art activity stressing 30 strips. Children can make trains, worms, caterpillars, etc. Group and count by tens.
4. Use dot to dot dittos.
5. Give each child assorted colors of 30 1/2" squares to create a mosaic picture.
6. Use classroom beads to count and sort by 10's.

INITIAL LESSON
UNIT 13 - CALENDAR
DAY, WEEK, MONTH, YESTERDAY, TODAY, TOMORROW, WEEKEND
(Use Before Lessons 100-107)

PURPOSES

To introduce days of the week and months of the year as they relate to the calendar.

VOCABULARY DEVELOPMENT

Day, week, month; Sunday, Monday, Tuesday, etc.; January, February, March, etc.; calendar, yesterday, today, tomorrow, weekend.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - One complete real calendar, black line copy of Astra's calendar month. Unit 13 Badges.
Children - Manipulation Bags with 30 counters, and one ditto of Astra's calendar per child.

RECOMMENDED METHOD

Sing Astra's Song. Remove real calendar and calendar dittos. Discuss Astra and the contents of the box. Talk about seven days in a week and four weeks in a month. Find today, yesterday and tomorrow on your classroom calendar and the real calendar in Astra's Box. Discuss five days of the week at school, two days at home which are the weekend. Discuss day, week, and month. Recite days of the week and months of the year. Recite the following traditional rhyme.

Calendar

Thirty days have September
April, June, and November.
All the rest have 31,
Except February which has 28
And leap year gives it 29.

Distribute Manipulation Bags. Remove 30 counters. Distribute ditto copies of Astra's calendar. Show children how to put one counter on each number. Have children place counters on numbers as you count together. Praise each child. Remove counters as you praise backwards 30-1. Praise children.

Sing Unit Song (Tune - "Twinkle, Twinkle" - traditional).

Calendar

Sunday, Monday, Tuesday, Wednesday,
That's the way our week begins.
Thursday, Friday, Saturday,
That's the way our week ends.

UNIT 13 - CALENDAR

Monday, Tuesday, Wednesday at School,
Thursday, Friday at our school.
Saturday and Sunday stay at home,
On the weekend we play at home.

January, February, March, April, May
Every month has many-a-day.
June, July, August and September,
There are many months to remember
October, November, then December is last
Now the whole year is past.

Tell the children that Astra will return when they have learned about the calendar.

UNIT ACTIVITY IDEAS

1. If you have not already been having a daily calendar activity with your class, start now and continue throughout the year. Stress today, yesterday and tomorrow. Count from 1 to find today. Sing songs daily for days of the week and months of the year.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Make a manipulative calendar to construct with the children. Use separate cards for months, days, years and numbers. Put into a learning center.
2. To stress seven days in a week, let children make a booklet using sheets labeled for each day. They can draw a special activity from home/school to illustrate each day.
3. Using a colorful calendar go through each month and write children's birthdays on appropriate dates. Make a graph for each month of these birthdays.
4. Put mural materials (paint, paper, etc.) in box. Plan a "Month Mural" illustrated by holiday and/or seasonal activities such as January - Snowman, February - hearts, March - shamrock, April - bunnies, May - flowers, June - sunshine, July - fireworks, August - vacation, September - school, October - Jack-o'lantern, November - turkeys, and December - Christmas trees. This is a long term project to be completed during activity time by groups working on each section.
5. Put about thirty pictures into box (twenty illustrating school-day activities, and ten illustrating week-end activities). Have children categorize these activities appropriately.
6. Keep a "weather" calendar for one month - sunny, rainy, windy, etc. At the end of the month make a graph of the monthly weather.
7. Mark special days - holidays, birthdays, etc. - on new calendar. Each day as you are doing calendar, count how many days until the special day arrives.

INITIAL LESSON
UNIT 14 - COUNTING BY 2'S AND BY 5'S
(2-30 BY 2'S AND 5-30 BY 5'S
(Use Before Lessons 108-115)

PURPOSES

To learn to count by 2's and 5's to thirty.

VOCABULARY DEVELOPMENT

Teacher - Large picture cards for 2's and 5's. 30 crayons or pencils or counting sticks. Unit 14 Badges.
Children - Manipulation Bags with number cards 1-30 and 30 counters.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box. Discuss counting by 2's. Display picture of 2's. Count 1, 2, 3, 4, etc. Say the odd numbers softly and even numbers loudly. Repeat counting the pencils. Count the pictures by 2's, count objects by 2's. Repeat procedure for 5's.

Distribute Manipulation Bags. Remove contents. Have children place counters on even numbers on their number cards. Count by 2's to 30. Repeat for 5's. Praise children. Sing Unit Song (Tune - "Mulberry Bush" - traditional).

2's and 5's

Here we go a counting
a counting
a counting
Here we go a counting
A counting by 2's and 5's.

This is the way we count by 2's
count by 2's
count by 2's
This is the way we count by 2's
Let's do it now.

(At this point stop and count by 2's in chorus)

This is the way we count by 5's
count by 5's
count by 5's
This is the way we count by 5's
Let's do it now.

(count by 5's to 30 in chorus)

Tell the children that Astra will return when they have learned to count by 2's and 5's.

UNIT 14 - COUNTING BY 2'S AND BY 5'S

UNIT ACTIVITY IDEAS

1. Play "Round and Round the Village." Have children go around by 2's.
2. Line up class and count off by 2's for any game.
3. Line up students. Count by 2's then count by 1's and have even numbered children sit down or stand up as their number is counted.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Create a class "by 2's" and "by 5's" book by placing 2 or 5 pictures on each page. Number pages and use for counting purposes.
2. Put graph paper and 1 pair of shoes in box. Have children take off their shoes and line up the pairs. Count by 2's. Children can make pictures of both shoes to add to a graph organized for counting by 2's.
3. Count socks by 2's. Count feet and hands. In box put graph paper and 1 pair of socks, pictures of feet and hands to cut and paste on class graphing chart.
4. A box of crackers, cookies or candy can be sorted into groups of 5 on graph paper. Counting by 1's and 5's should follow. Each child may have 5 crackers, cookies, or candies after coloring in 5 boxes on graph paper!
5. Line counting blocks in rows of 5. Every 5th, 10th, etc., block should be a different color for emphasis. Counting by 1's emphasizing the last in each number row. Then count by 5's. Repeat activity for 2's.
6. String or glue macaroni, dots, shapes, etc., in patterns for counting by 5's or 2's.

INITIAL LESSON
UNIT 15 - ORDINALS
(FIRST, SECOND, THIRD, FOURTH, FIFTH)
(Use Before Lessons 116-123)

PURPOSES

To develop concepts of first, second, third, fourth, and fifth and learn 1st, 2nd, 3rd, 4th, and 5th.

VOCABULARY DEVELOPMENT

First, second, third, fourth, fifth.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Five pieces of colored paper (five different colors), ordinal cards, Unit 15 Badges.
Children - Manipulation Bags with five counters each and ordinal word cards.

RECOMMENDED METHOD

Sing Astra's Song. Remove contents from box. Discuss Astra and the contents of the box. Discuss first as another name for one, second as another name for two, etc. Line up five pieces of colored paper. Discuss which color is first, second, third, fourth and fifth. Illustrate with ordinal word cards. Have five children come to front of group. Discuss who is first, second, etc.

Distribute Manipulation Bags. Remove contents. Have children pick up one counter. Say that this is the first. Match to 1st card. Repeat for second, third, fourth, and fifth. Sing Unit Song (Tune - "Here We Go Round the Mulberry Bush" - traditional).

Ordinals

__________ is the first in line,
first in line,
first in line,
__________ is the first in line,
As we play this game.

Repeat for second through fifth.

Tell the children that Astra will return when they have learned first, second, third, fourth and fifth.

UNIT ACTIVITY IDEAS

1. When lining up activities, locate and name first, second, etc.
2. When planning activities, discuss which to do first, second, etc.
3. To augment learning, have children learn to read the words first, second, third, fourth, and fifth.

UNIT 15 - ORDINALS

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use groups of toy cars (or other toys). Line them up and name which is first, second, etc. Change order and re-name.
2. Using a calendar, discuss that the 1 is the first, 2 is the second, etc.
3. Using colored squares (five colors) and paste, make a row of five squares following directions such as, the first is the yellow, the second is red, etc.
4. Line up 5 boxes. Have children follow verbal directions to place objects into the correct box, i.e., place the ball in the second box, put the pencil in the fifth box, etc.
5. Use sequence pictures to emphasize what happens first, second, third, fourth, fifth during stories.
6. Cook a recipe with 5 steps. Make cards showing each step. Label them first, second, third, fourth, and fifth.

INITIAL LESSON
UNIT 16 - MONEY - QUARTER
(Use Before Lessons 124-131)

PURPOSES

To learn the value of a quarter; to review pennies, nickels and dimes.

VOCABULARY DEVELOPMENT

Quarter

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large picture cards of toys and other objects, price tags from 1¢ - 25¢, real or play coins (1 quarter, 2 dimes, 5 nickels, 10 pennies), Unit 16 Badges.
Children - Manipulation Bags with 1 toy and coin cards, real coins, or play coins (1 quarter, 2 dimes, 5 nickels, 10 pennies).

RECOMMENDED METHOD

Sing Astra's Song. Remove and display large cards and real or play coins. Discuss Astra and the contents of the box. Review concept of counting 1-25. Count by 5's to 25. Talk about a dime having the value of 10 pennies, a quarter having a value of twenty-five cents. Review value of nickels. Discuss other ways to make a dime or quarter, i.e., 2 dimes and 1 nickel, etc. Use large picture cards with price tags. Have child come to front of group and help to figure out what coins would buy the objects on each card. Use a different child for each card.

Remove and distribute Manipulation Bags. Have each child remove coins and toy from bags. Pretend the toy costs 25 cents. Have the children count 25 pennies. Repeat for 2 dimes, 1 nickel, and other combinations for 25¢. Count nickels by 5's to twenty-five. Praise the children as you continue with the lesson. Then say the toy now costs 11¢. Count out 11 pennies. Then count out 1 dime and 1 penny. Continue with other prices for the toys. This is to give children an overview. Do not expect them to thoroughly understand the concept at this time.

Sing Unit Song (Tune - "Mary Had A Little Lamb" - traditional).

Quarter

I have a new shiny quarter
shiny quarter
shiny quarter
I have a new shiny quarter
To buy a little toy

A quarter is the same as 25 pennies
25 pennies
25 pennies
A quarter is the same as 25 pennies
I can buy a toy

A quarter is the same as 3 nickels and a dime
3 nickels and a dime
3 nickels and a dime
A quarter is the same as 3 nickels and a dime
I can buy a toy

A quarter is the same as 5 nickels
5 nickels
5 nickels
A quarter is the same as 5 nickels
I can buy a toy

Tell the children that Astra will return when they have learned about quarters.

UNIT ACTIVITY IDEAS

See Unit 10 Activity Ideas.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

(1-3 - use real money)

1. Put in 10 pennies, 2 nickels. Have children make comparisons, i.e., 5 pennies equals 1 nickel, etc.
2. Put in 10 pennies, 1 dime, and match as above.
3. Put in 10 pennies, 2 nickels, 1 dime to practice combinations.
4. Put in pictures or objects with price tags plus 10 pennies, 2 nickels, 1 dime.
5. Put in grocery store items with price tags and match money for purchase.
6. Repeat number 5 for post office.
7. Put in appropriate money film strip.

INITIAL LESSON
UNIT 17 - NUMBER SEQUENCING
BEFORE, AFTER, BETWEEN
(Use Before Lessons 132-139)

PURPOSES

To learn concepts of before, after and between with numbers 1-30.

VOCABULARY DEVELOPMENT

Before, after, between

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Three large toys/objects and 3 large number cards 1-30. Unit 17 Badges.
Children - Manipulation Bags with three counters, one of each color.

RECOMMENDED METHOD

Sing Astra's Song. Remove large toy/object and number cards from box. Discuss Astra and the contents of the box. Display picture cards. Locate card "in between." Discuss which picture comes before, after. Change order of pictures and use vocabulary - between, before, after. Display three number cards in sequence. Relate to concept of before, after, between. Repeat with other numbers.

Remove and distribute Manipulation Bags. Place counters in color sequence such as red, yellow, blue. Discuss between, before and after. Praise each child

Sing Unit Song (Tune - "Yankee Doodle" - traditional). Point to number cards as song is sung.

Before, Between, and After

One, two, three numbers, can you see?
One comes just before two
Three is after number two
And two is in between.

Tell the children that Astra will return when they have learned before, after and between.

UNIT ACTIVITY IDEAS

1. For children who have difficulty with the "before" concept, go back to the concrete work with pictures, objects and sequencing.

UNIT 17 - NUMBER SEQUENCING - BEFORE, AFTER, BETWEEN

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Work on three shape sequencing. Use before, after, between to illustrate concepts.
2. String wooden beads and discuss which colors and shapes come before, after, and between, starting with first bead.
3. Put in sets of three objects to line up and discuss before, after, and between.
4. Use body to demonstrate movements. Identify which was before, after, between.
5. Use three body movements. Sequence them. Do task. Identify task done before, after, between.

INITIAL LESSON
UNIT 18 - GEOMETRIC SHAPES
OVAL AND DIAMOND
(Use Before Lessons 140-147)

PURPOSES

To learn oval and diamond and review circle, square, triangle, and rectangle.

VOCABULARY DEVELOPMENT

Oval, diamond, review circle, square, triangle and rectangle.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Two each large rectangle, oval, diamond, circle, square, triangle, and rectangle, real objects in these shapes. Unit 18 Badges.
Children - Manipulation Bags with 2 cards each for oval, diamond, rectangle, circle, square, triangle, and rectangle.

RECOMMENDED METHOD

Sing Astra's Song. Remove teacher materials from Magic Math Box. Discuss Astra and the contents of the box. Name each shape. Select children to trace and hold shapes. Have children repeat names of shapes. Match same shapes. Discuss real objects with rectangle, oval, and diamond shapes such as:

▭ book, frame

⬭ beans, hard boiled egg, mirror, picture frame

◇ kite, baseball diamond

Move children to match shapes and use correct vocabulary.

Distribute and open Manipulation Bags. Trace the shapes with finger, name and match the shapes. Praise children.

Sing Unit Song (Tune - "Did You Ever See a Lassie" - traditional)

Oval and Diamond

I can find the oval, the oval, the oval
I can find the oval, see it right here.

I can find the diamond, the diamond, the diamond
I can find the diamond, see it right here.

I can find the circle, the circle, the circle,
I can find the circle, see it right here.

I can find the square, the square, the square,
I can find the square, see it right here.

UNIT 18 - GEOMETRIC SHAPES

I can find the triangle, the triangle, the triangle
I can find the triangle, see it right here.

I can find the rectangle, the rectangle, the rectangle
I can find the rectangle, see it right here.

Tell the children that Astra will return when they have learned their new shapes.

UNIT ACTIVITY IDEAS

1. See Unit 1 Activity Ideas.
2. Make mosaic pictures using small shapes as jewels.
3. Make crowns using small shapes or jewels in patterns.
4. Put kickball in box. Play "kindergarten" version of kickball using diamond shape field.
5. Introduce parquetry blocks for activity time.
6. Make and/or fly kites.

INITIAL LESSON
UNIT 19 - TIME
HOURS
(Use Before Lessons 148-155)

PURPOSES

To tell time by the hour.

VOCABULARY DEVELOPMENT

Clock, hour, hour hand, minute, minute hand, o'clock, time.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Large classroom clock.
Children - Manipulation Bags each with one small clock (if not available, make clocks before the lesson with Astra's Clock Pattern).

RECOMMENDED METHOD

Sing Astra's Song. Remove teacher's materials from Astra's Magic Math Box. Discuss Astra and the contents of the box. Remove Manipulation Bags. Discuss contents. Discuss long hand and short hand and o'clock.

Demonstrate 3:00 o'clock with large clock. Have children match your clock. Discuss long hand pointing to 12 always equals o'clock. Continue to demonstrate several other hour times having children match their clocks to yours. Praise each child.

Sing Unit Song (Tune - "Mary Had a Little Lamb" - traditional).

Time

This is how we read the clock
read the clock
read the clock
When we are telling time.

The long hand has to point to twelve
point to twelve
point to twelve
The long hand has to point to twelve
When it says o'clock.

The short hand points to _____ o'clock
_____ o'clock
_____ o'clock
The short hand points to _____ o'clock
When it is _____ o'clock.

Tell the children that Astra will return when they have learned to tell time by the hour.

UNIT 19 - TIME

UNIT ACTIVITY IDEAS

1. Refer to the classroom clock during the daily activities. Point out the hour.
2. Let children draw creative clock faces. Imagine ways to tell times in outer space and make clocks.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Have children imitate Astra on Astra's Clock. Children pretend to be the face on a clock and use their arms as the hands of a clock. Have children tell what time is being shown.
2. Have a "Time Day." Have children wear their time piece or bring small clocks to school. Sing Unit Songs. Make a graph of different watches and clocks.
3. Bring photos or pictures of different timepieces. Categorize watches, clocks, sundials, standard and digital watches.
4. Put set of number cards 1-12 in box. Children take turns drawing cards from box and telling something about an activity that takes place at time on the card. Discuss whether the time is day or night. Children can pantomime activity.

INITIAL LESSON
UNIT 20 - FRACTIONS
WHOLE AND HALF, FULL AND EMPTY
(Use Before Lessons 156-163)

PURPOSES

To learn the meaning of whole and half.

VOCABULARY DEVELOPMENT

Whole, half, part, full, empty

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - Astra's Cookies, real apple, scissors, yarn, paper, crayon.
Children - Manipulation Bags each with Astra's Apples, cookies, crayons, and scissors.

RECOMMENDED METHOD

Sing Astra's Song. Remove teacher materials from box. Dicuss Astra and the contents of the box.

Remove and distribute Manipulation Bags. Discuss contents. Fold paper in half. Color 1/2. Have children do same. Discuss whole and half. Half is part of a whole. Each part must be the same size to be half.

Talk about whole apples. Cut an apple in 1/2. Children take picture of Astra's apple and cut it in half. Discuss whole and half.

Teacher takes Astra's whole cookie picture and compares it to half cookie picture. Discuss chocolate chips. Cut so there are three chips on each side. Cut one cookie into two parts, not halves - 1 chip in one part, 5 chips in the other part. Discuss that these two parts are not half, because they are not equal. Have children repeat procedure with their cookies.

Give positive reinforcement and verbal encouragement to each child as lesson proceeds.

Sing Unit Song (Tune - "Twinkle, Twinkle Little Star" - traditional).

Whole and Half

Whole and half
Whole and half
We are learning whole and half.

Whole is all
Whole is all
It takes two halves to make a whole.

Tell the children that Astra will return when they have learned about whole and half.

UNIT 20 - FRACTIONS

UNIT ACTIVITY IDEAS

1. Point out whole and half in the classroom environment.
2. Give yarn to each child to cut in half. Ask "Are they still the same length?" Have children stretch them out again to see. Repeat. Compare lengths. Make halves look different, one small and one long.
3. Have a juice or milk and cookie party. Children will serve halves to each other. Discuss glasses that are half full, half empty, and full.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Put in one square cookie for each child. Discuss whole. Break cookies into two parts - discuss which are halves and which are unequal parts (not halves). Eat the cookies.

INITIAL LESSON
UNIT 21 - ADDITION 0-5
(Use before lessons 164-175)

PURPOSES

To learn the concept of addition of objects that total 5 or less. To learn the concept of "one more" when adding objects. To introduce the concept of zero in adding objects.

NOTE: This unit is expanded. Use two or more days for initial lesson.

VOCABULARY DEVELOPMENT

Addition, plus, +, equals, =, add, answer.

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - 2 sets of large number cards 0-5 plus extra 0. 1 set of 5 objects or counters.
Children - Manipulation Bag with 5 objects. 1 + (plus sign), 1 = (equals sign), paper per child folded in half.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box.

For initial learning remove real objects or counters and discuss adding 1 more (1+1, 2+1, 3+1, and 4+1). Explain that zero means none. Use various combinations of objects or counters. Use same procedure for adding 0 to each number (1+0), 2+0, 3+0, 4+0, 5+0, and 0+0) to demonstrate the addition. Verbalize the process. Have children demonstrate and process using their materials including folded papers. Praise their success.

For the second learning level use two teacher number cards and "+" to set up addition problem. Demonstrate manipulation of counters/objects for the numbers. Have children remove cards to respond with appropriate answer. Praise their success.

For the third level create problems by laying out objects as instructed - for example lay 2 objects on left side of folded paper and one object on right side. Place corresponding number cards below each set of objects. Utilize plus and equal signs. Pick up 2 objects and 1 object and count them so children understand that they are joining 2 and 1 to make 3.

NOTE: This is an introduction to addition. Children are not expected to learn rote mastery of combinations at this time. All ideas in this unit are designed to give students experience in the concept of addition through language experience and manipulation of concrete objects, followed by recording and/or graphing of numbers.

UNIT 21 - ADDITION 0-5

For the fourth level demonstrate adding with picture cards/objects. Write the numbers on the board horizontally. For example, 3+2=5. Let children practice writing combinations on individual slates or classroom chalkboard. Repeat process for vertical addition.

Sing Unit Song as children manipulate at each level (Tune - "Mary Had a Little Lamb" - traditional).

Adding

Astra helps me learn to add
learn to add
learn to add
Astra helps me learn to add
We have lots of fun.

This is how we learn to add
learn to add
learn to add
Put two numbers together now
And find out what we have

0 + 1 = 1
= 1
= 1
0 + 1 = 1
Now we have begun.

1 + 1 = 2
= 2
= 2
1 + 1 = 2
See what we can do.

1 + 2 = 3
= 3
= 3
1 + 2 = 3
How happy we can be

1 + 3 = 4
= 4
= 4
1 + 3 = 4
Now let's do one more

I can add 0 to 5
0 to 5
0 to 5
I can add from 0 to 5
Astra's numbers come alive.

Tell children that Astra will return and reward them with a badge when they have learned to add from 0 to 5.

UNIT 21 - ADDITION 0-5

UNIT ACTIVITY IDEAS

1. Have 3 children stand on your left side - 2 on the right side. Add the children. Repeat with other combinations. Write the number on the board horizontally and vertically.
2. Relate addition problems to life situations to establish relevancy, i.e. money to spend, cookies to eat, clothes in closet, etc.

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

1. Use "M and M" minibags or cups for each child to sort and add the candy by colors, i.e. 2 yellow + 1 red = 3. Eat when you are finished!
2. Use colored cereal for addition.
3. Colored macaroni - string, count and add.
3. Raisin, marshmallows, peanuts, grapes and berries - count, add and eat!
4. Make peanut butter as a class project. Have each child shell peanuts and count and drop into food blender. Then have the children record on class chart (by drawing or pasting) the number of peanuts they added to the blender.
5. Make vegetable soup with cubed vegetables. Record number of each vegetable added to pot.
6. Place on a graph.
7. Make cookies with raisins, nuts, and chocolate chips. Each child makes a cookie with different numbers of raisins, nuts, and chocolate chips. Count, add, and eat.
7. Use classroom objects to count and add.

UNIT 22 - SUBTRACTION 0-5

(Use Before Lesson 176-187)

PURPOSES

To learn the concept of subtraction of 5 or less. To learn the concept of one less. To learn the concept of 0 in subtraction.

VOCABULARY DEVELOPMENT

Minus, -, take away

MATERIALS FOR ASTRA'S MAGIC MATH BOX

Teacher - 2 sets of large number cards and 1 extra paper. 1 set of 5 objects or counters.
Children - Manipulation Bag with 5 objects, minus and equal sign, and yarn to place around objects.

RECOMMENDED METHOD

Sing Astra's Song. Discuss Astra and the contents of the box.

For initial learning remove real objects or counters and discuss subtracting for one less concept (5-1, 4-1, 3-1, 2-1, and 1-1). Use same procedure for subtracting 0 from each number (5-0, 4-0, 3-0, 2-0, 1-0, and 0-0). Use various combinations of objects or counters.

Distribute Manipulation Bags to children to demonstrate the subtraction process. Have children demonstrate and verbalize process using their materials including paper and yarn
Praise their success.

For the second learning level use teacher number cards and "-" sign to set up subtraction problems. Demonstrate manipulation of counters/objects for the numbers. Have children remove number cards to respond with appropriate answer. Praise their success.

For level 3 have children create problems by laying out objects as instructed, i.e. lay 3 objects on paper, encircle one object with yarn to represent one less. Place corresponding numbers and symbols below objects.

NOTE: This is an introduction to subtraction. All children are not expected to learn rote mastery of combinations at this time. All ideas in this unit are designed to give children experience in the concept of subtraction through language experience and manipulation of concrete objects followed by recording and/or graphing of numbers.

For level 4 demonstrate subtraction with picture cards/objects. Write the numbers on the board horizontally (i.e. 5-3=2). Let children practice writing combinations on individual slates or classroom chalkboard. Repeat process for vertical subtraction

$$\begin{array}{r} 5 \\ \underline{-3} \\ 2 \end{array}$$

UNIT 22 - SUBTRACTION 0-5

Sing Unit Song (Tune - "Happy Birthday" - traditional) as children manipulate objects and numbers.

Subtraction

This is how we subtract
This is how we subtract
Take the smaller from the larger
And see what is left.

5 minus 1 equals 4
5 minus 1 equals 4
5 minus 1 equals 4
Now let's do it some more.

4 minus 1 equals 3
4 minus 1 equals 3
4 minus 1 equals 3
How happy are we.

3 minus 1 equals 2
3 minus 1 equals 2
3 minus 1 equals 2
Now we know what to do.

2 minus 1 equals 1
2 minus 1 equals 1
2 minus 1 equals 1
Now we're almost done

1 minus 1 equals 0
1 minus 1 equals 0
1 minus 1 equals 0
That's as far as we go!

(Now invent your own verses!)

Tell children that Astra will bring a badge when they have mastered this unit.

UNIT ACTIVITY IDEAS

ADDITIONAL SUGGESTIONS FOR ASTRA'S MAGIC MATH BOX

Reverse activities from Unit 21!

*Astra's Magic Math Units 23 and 24 are available as additional units for those who have the use of calculators/computers.

Manipulatives

Manipulatives
1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 5 6 7 8 9 10

Written By [illegible]udith [illegible]rown, [illegible]anne [illegible]ut Burke, and [illegible]retch[illegible]n Ro[illegible]

ASTRA'S MAGIC MATH

Manipulatives

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MANIPULATIVES

ASTRA'S MAGIC MATH

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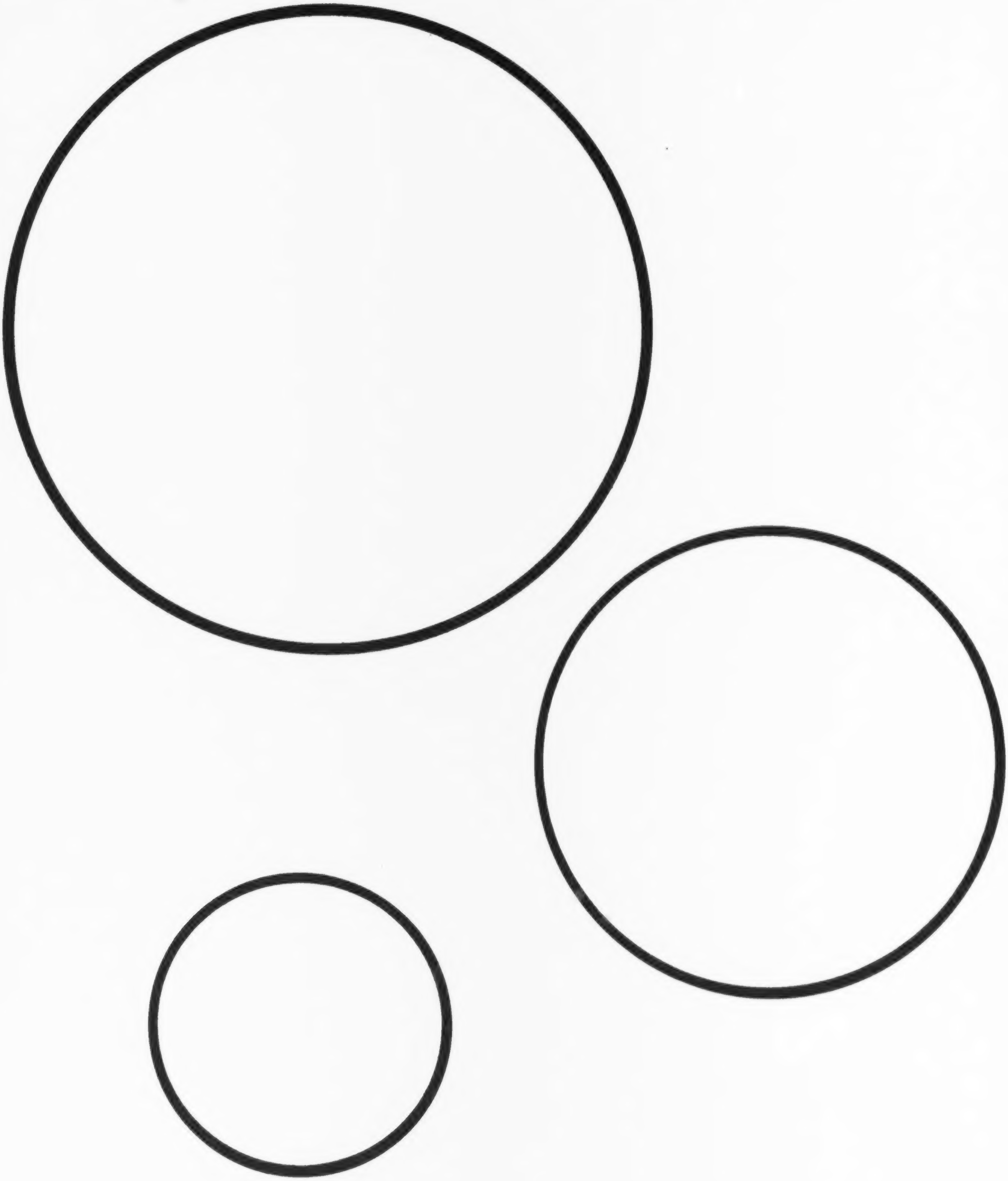

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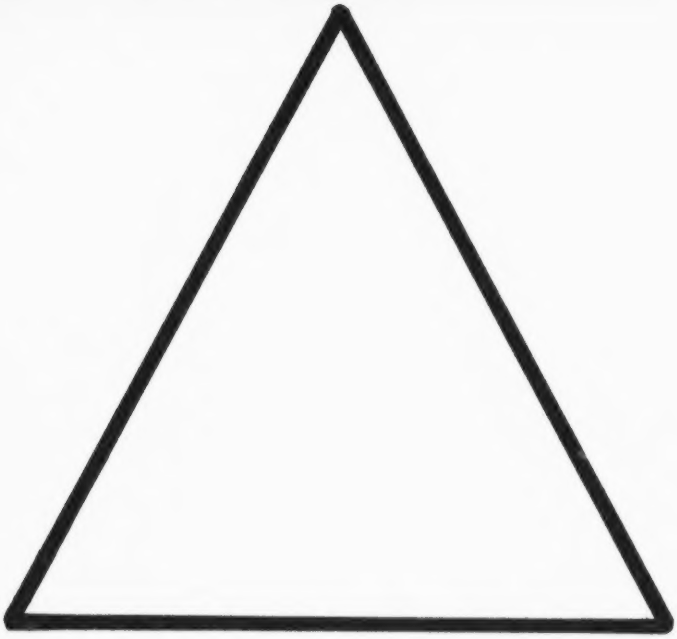

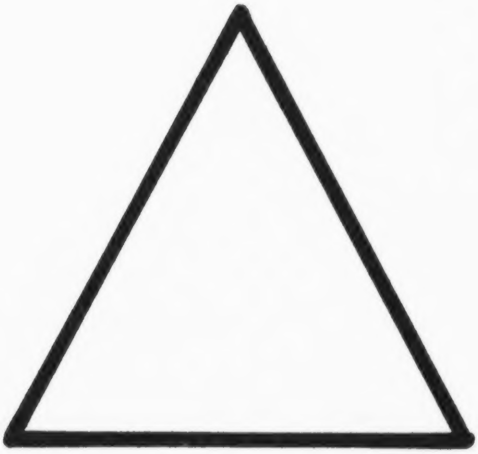

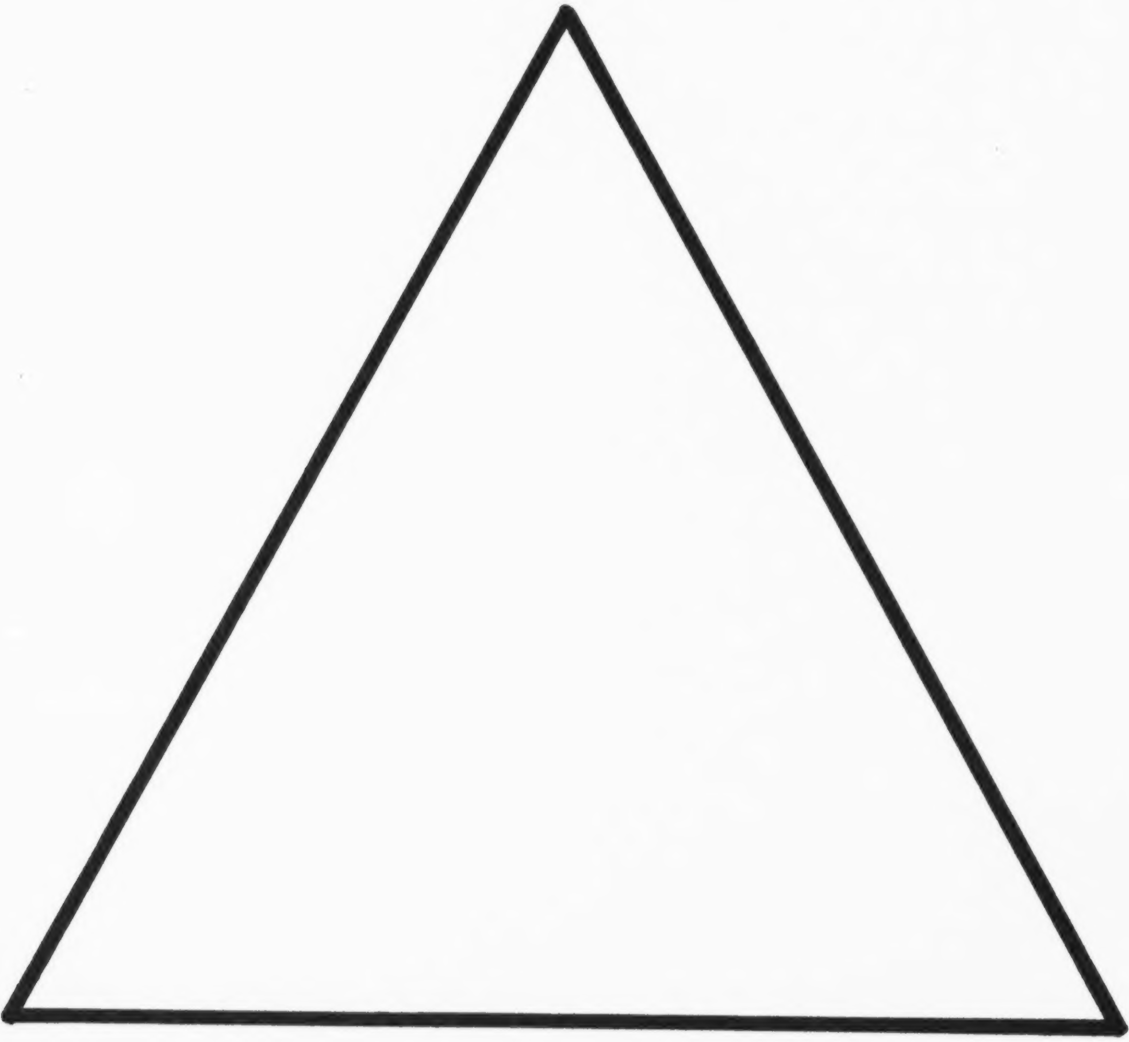

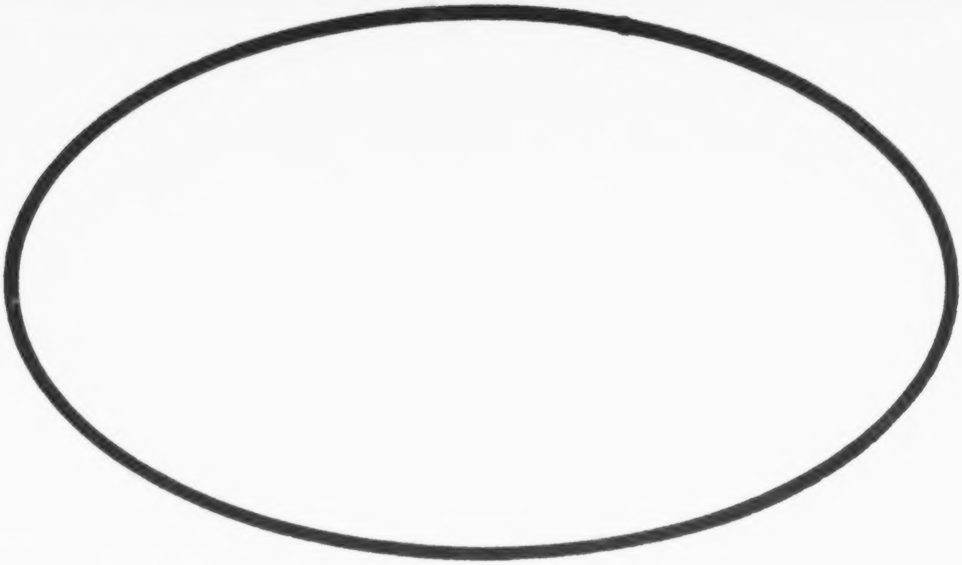

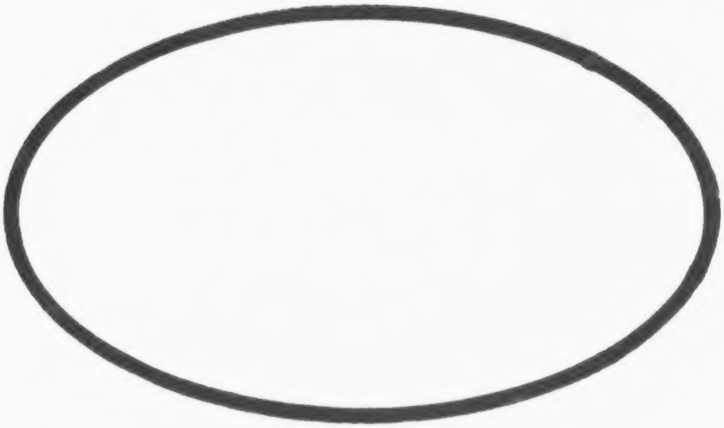

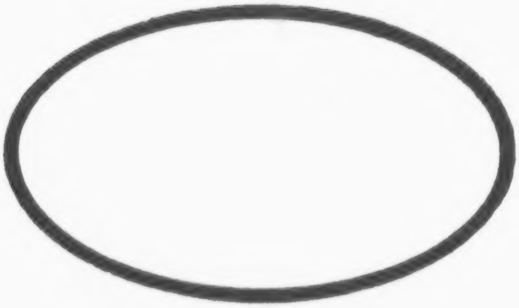

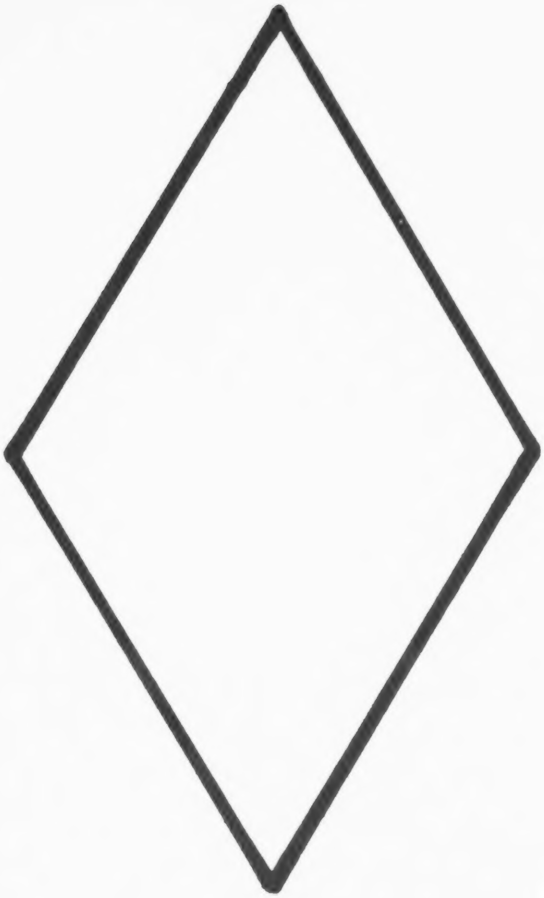

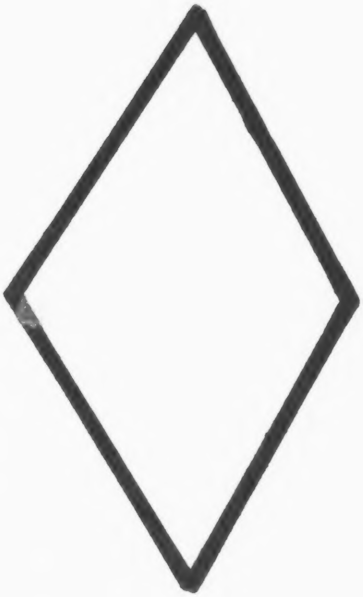

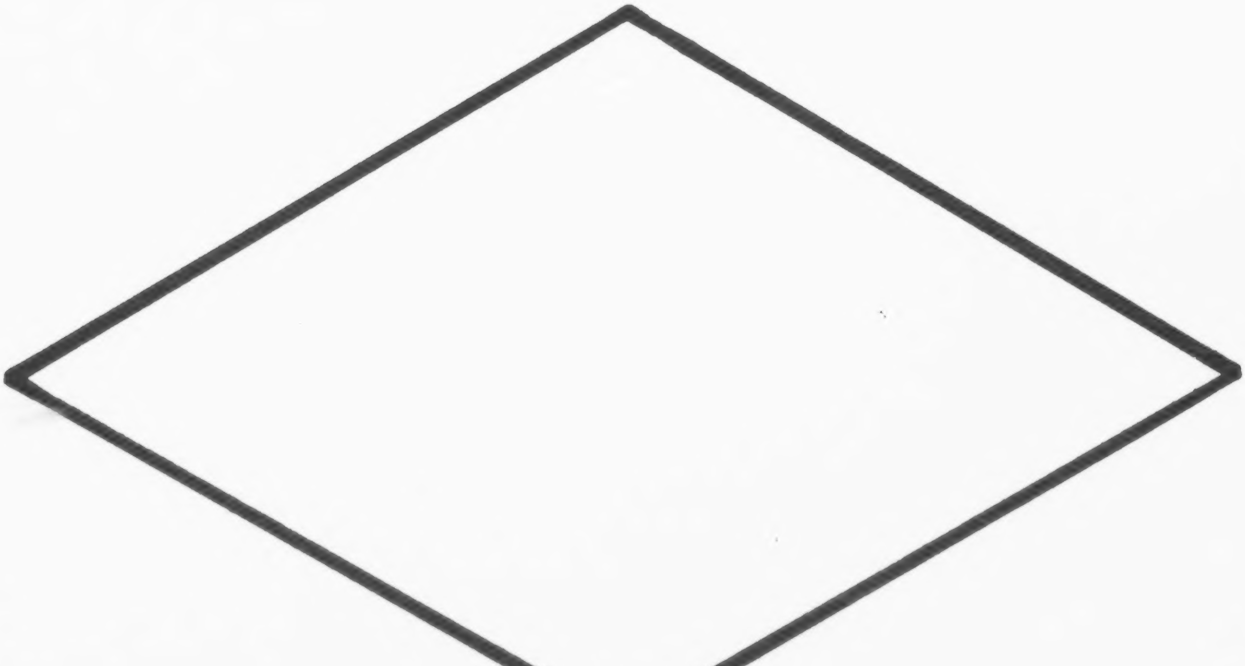

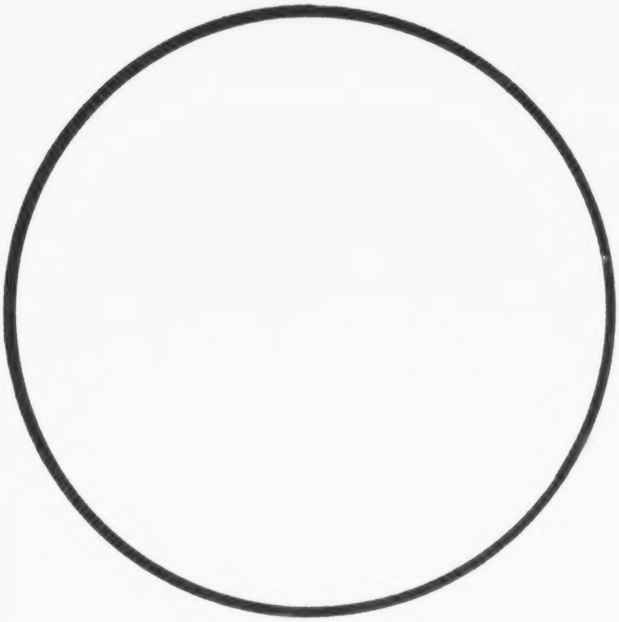

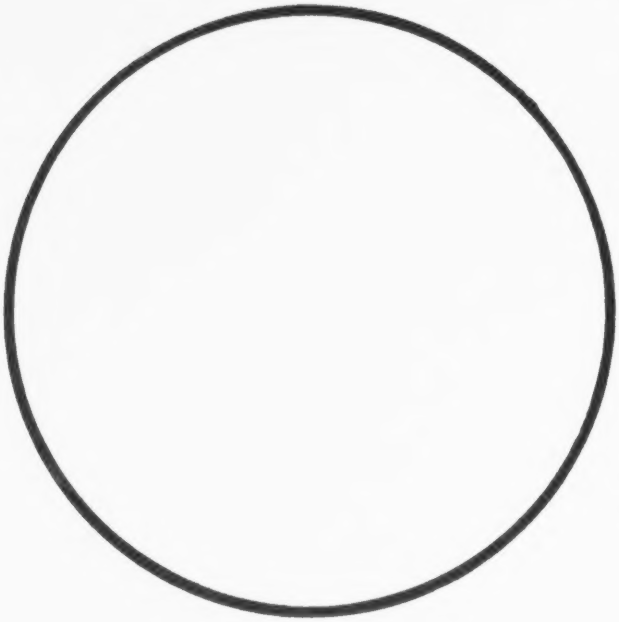

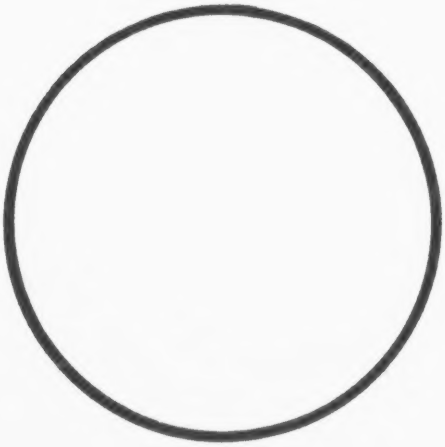

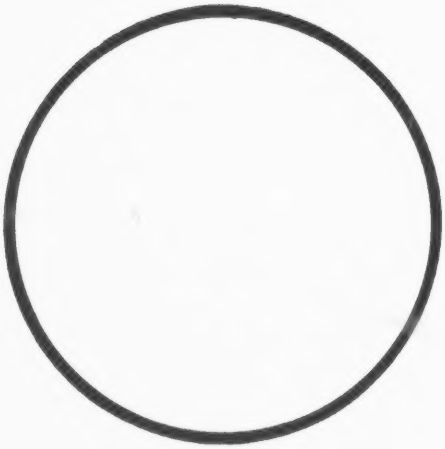

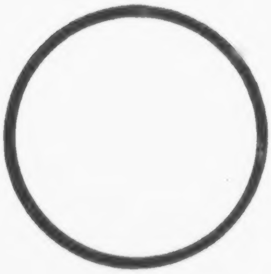

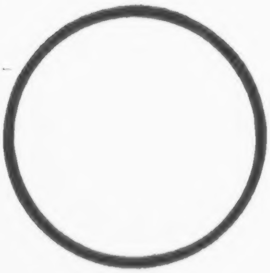

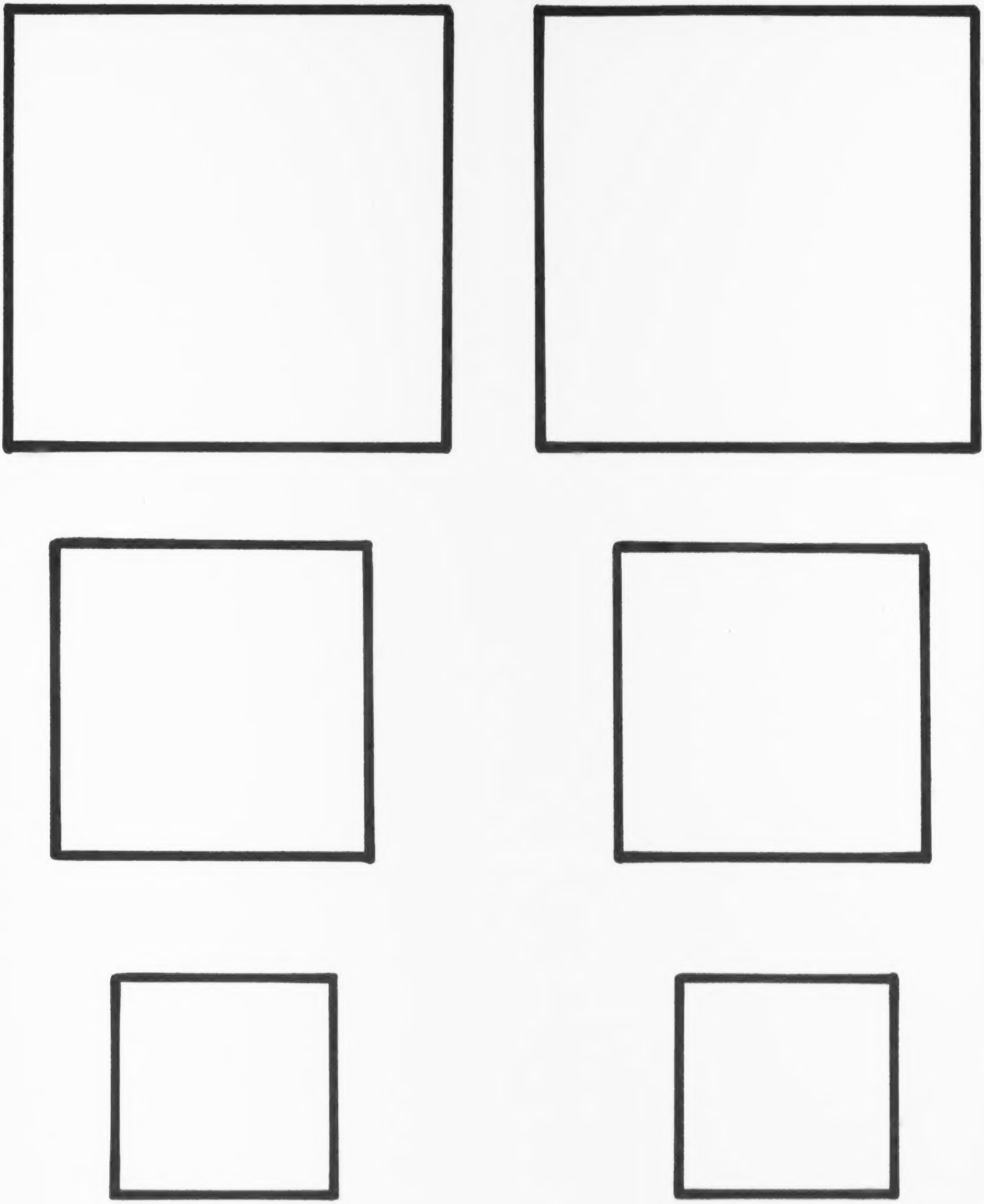

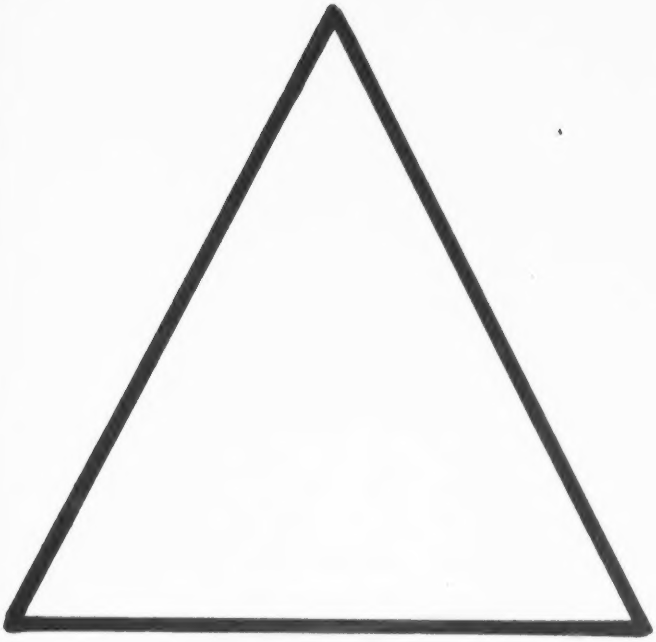

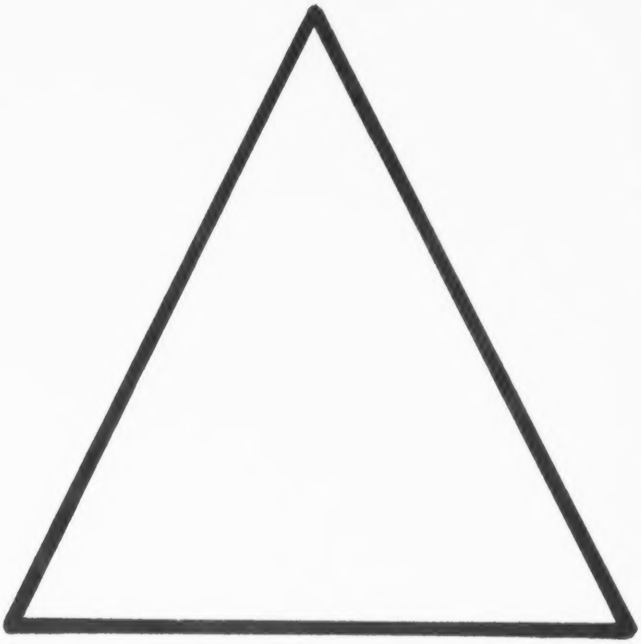

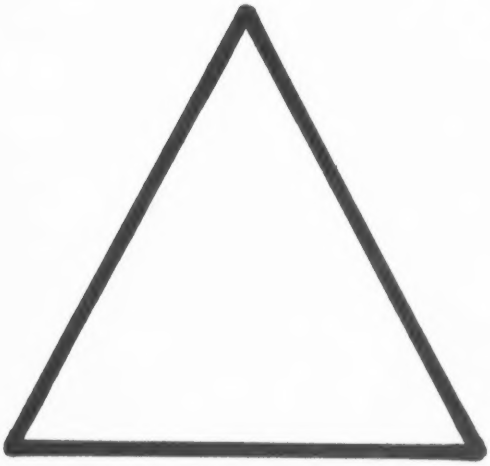

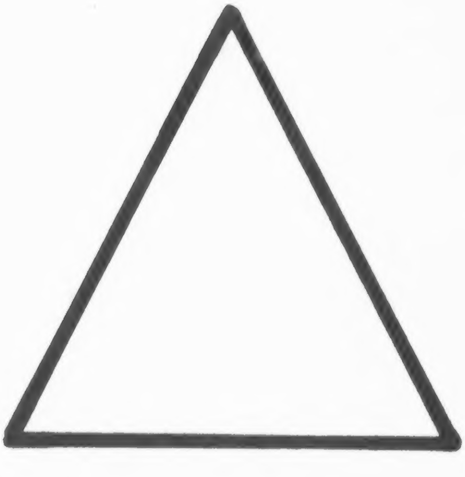

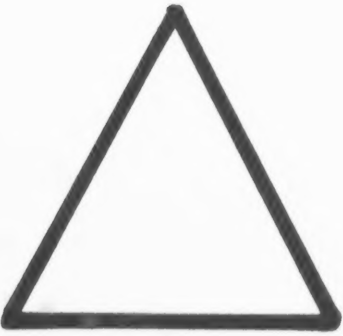

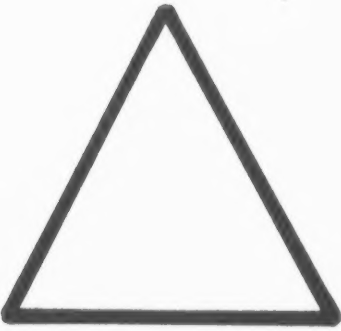

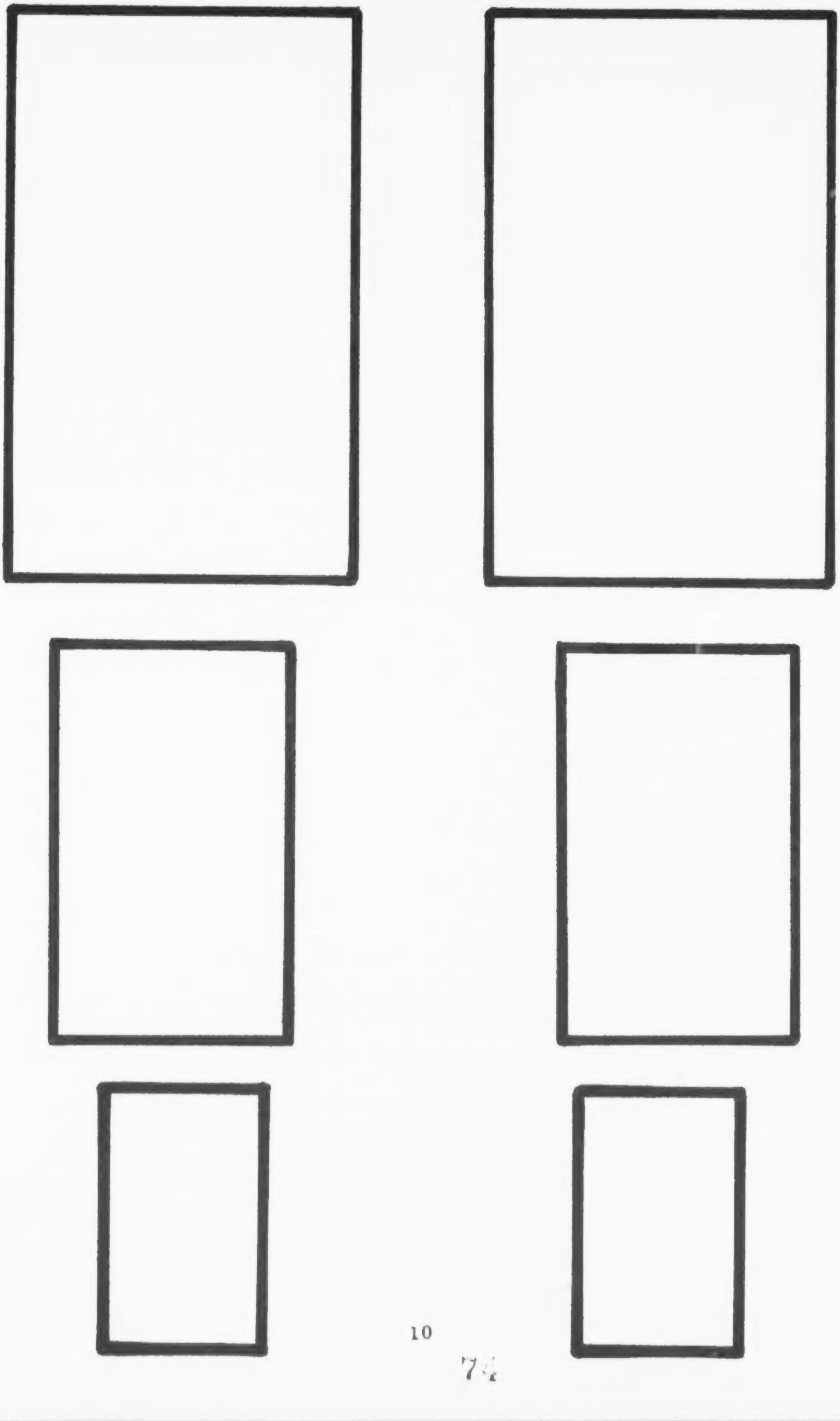

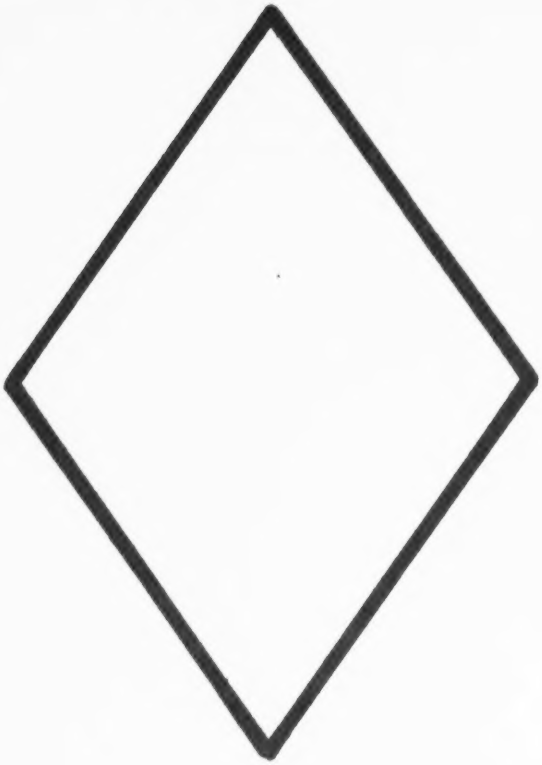

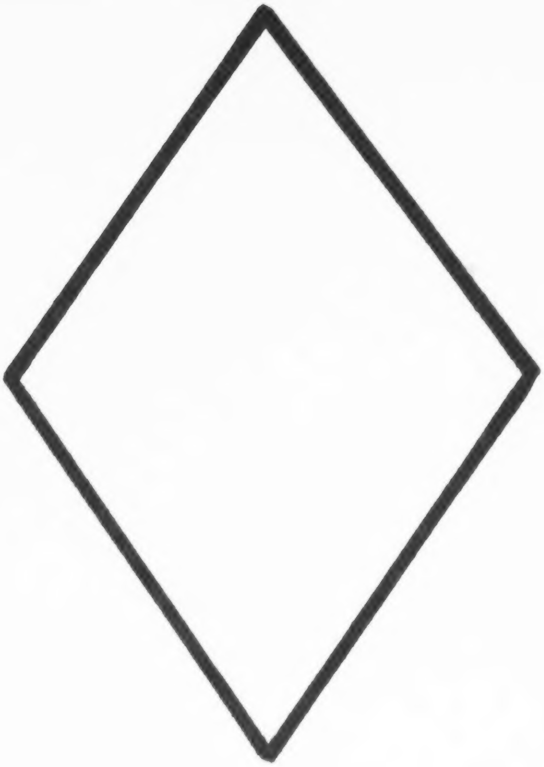

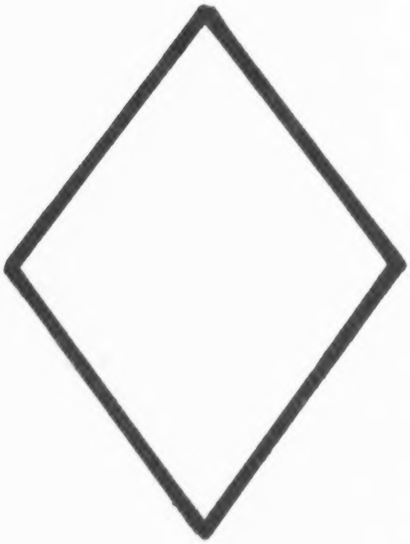

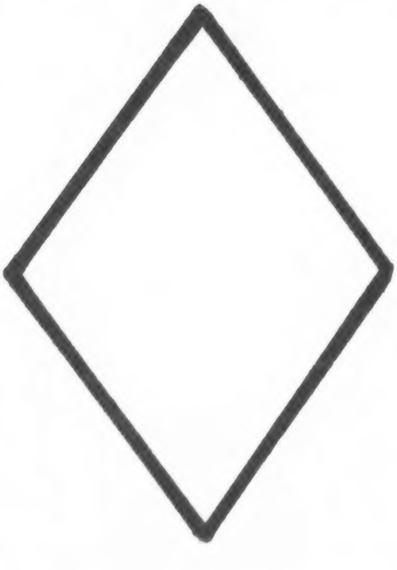

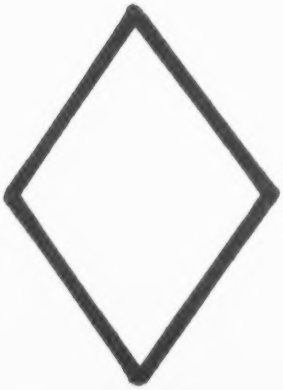

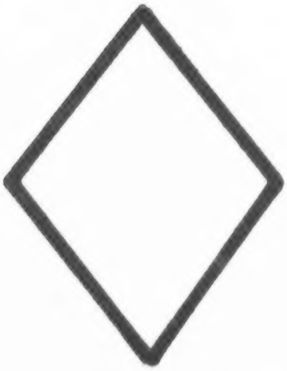

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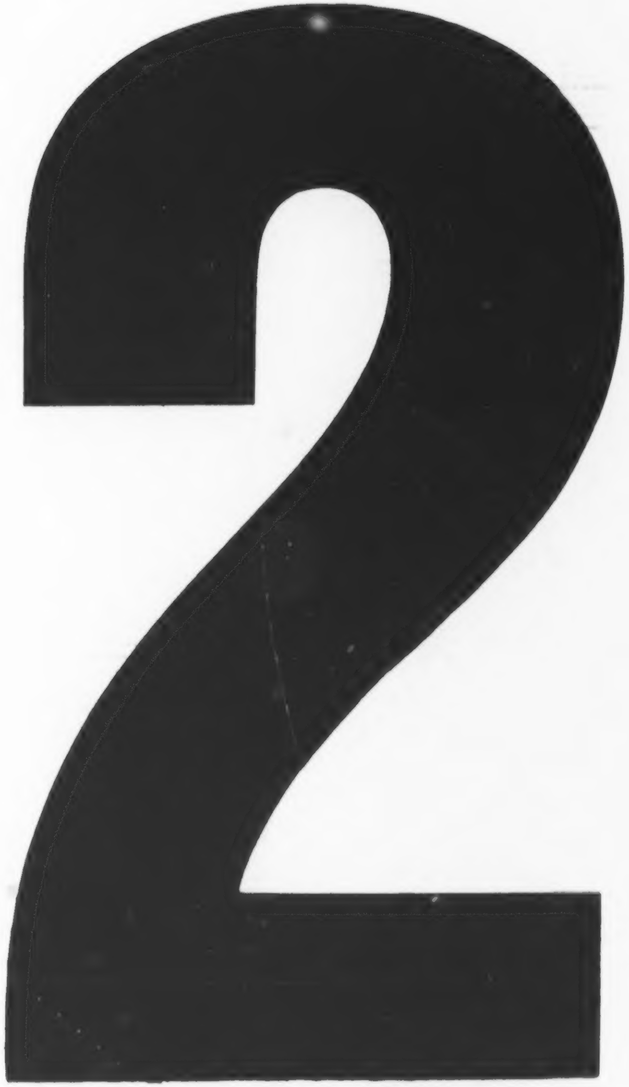

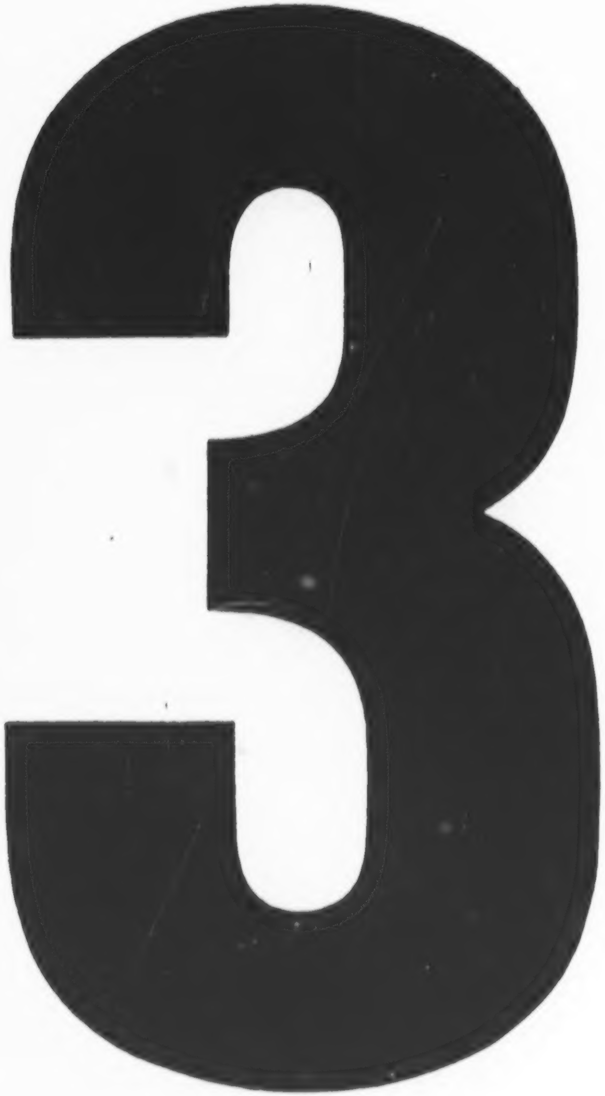

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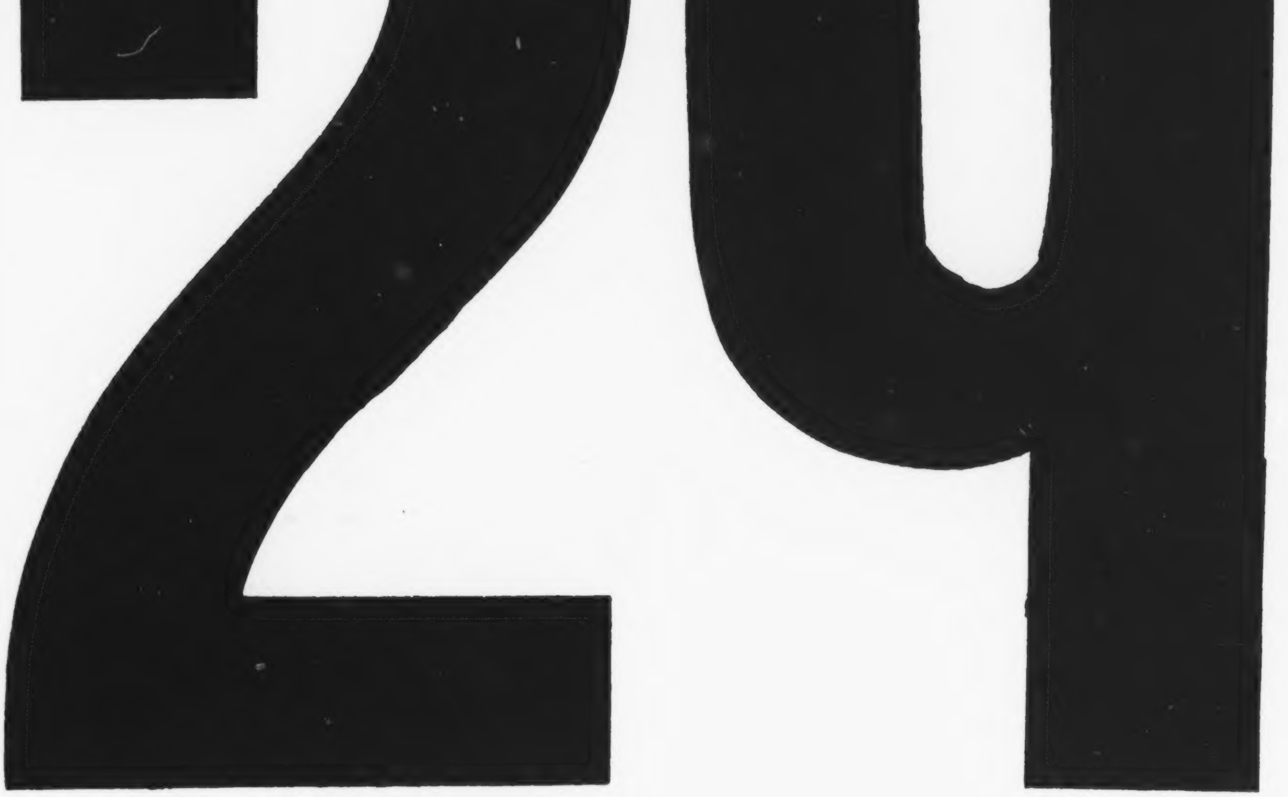

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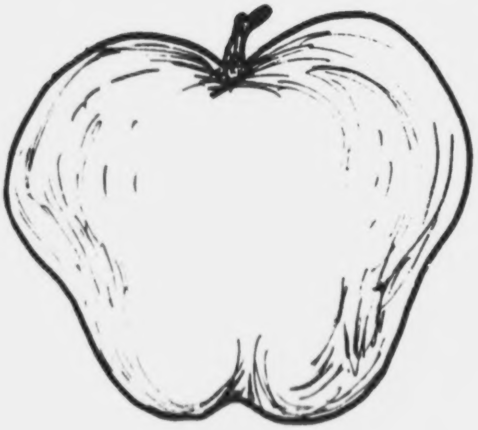

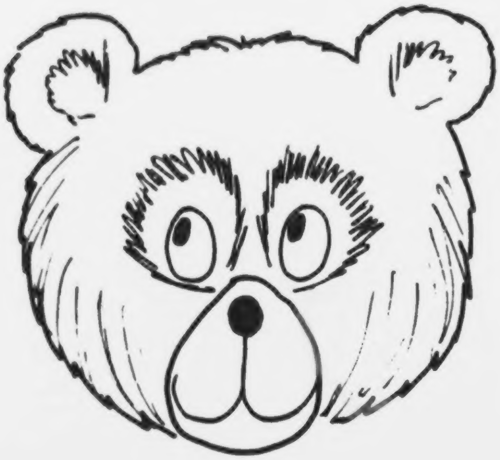

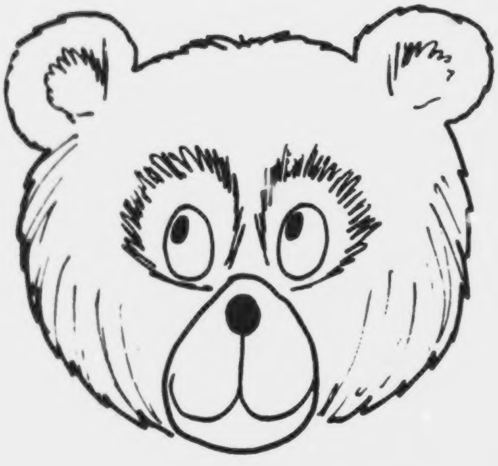

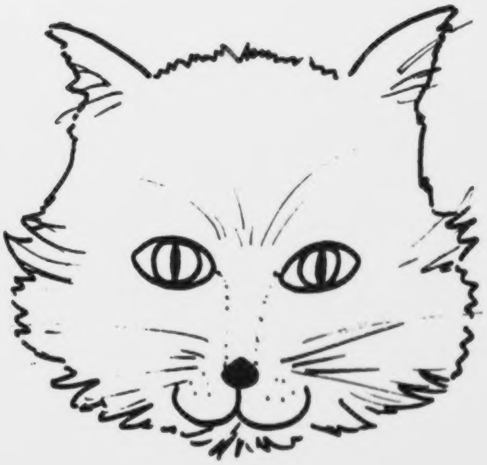

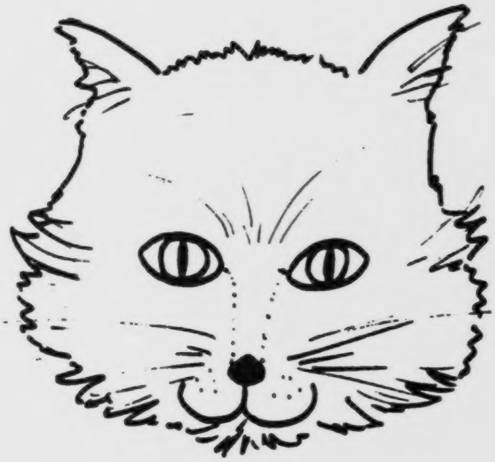

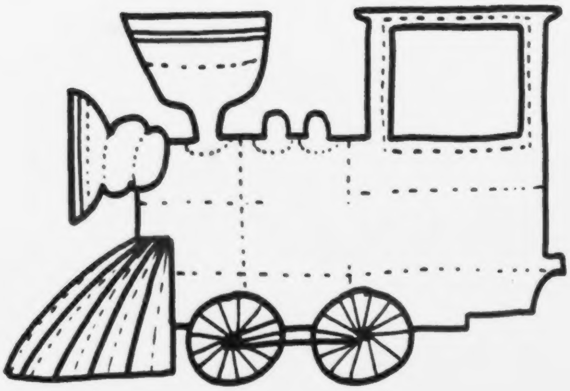

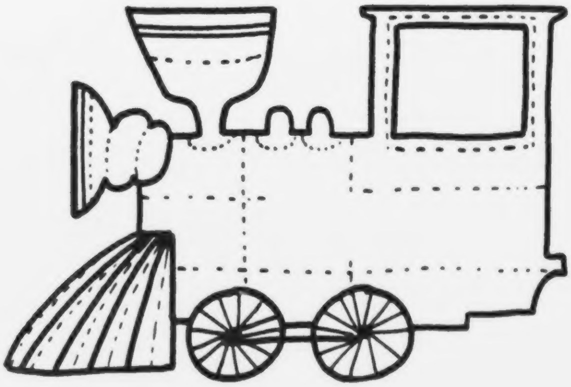

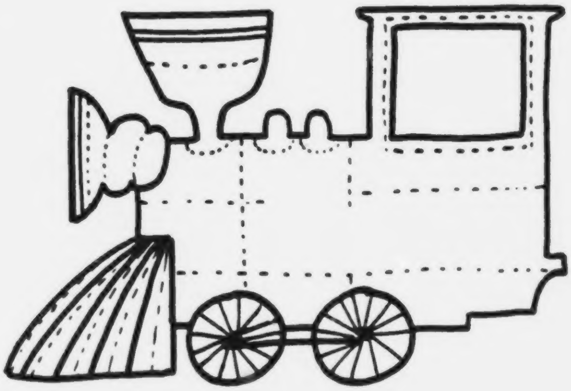

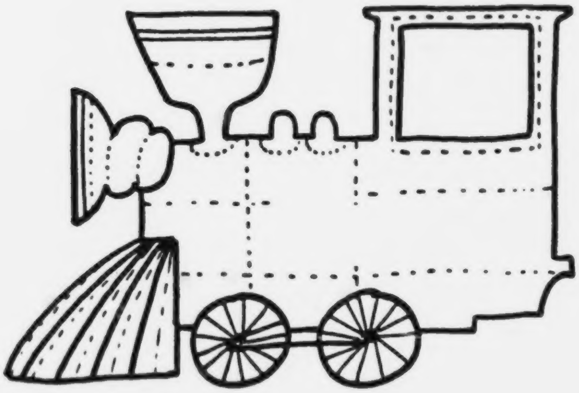

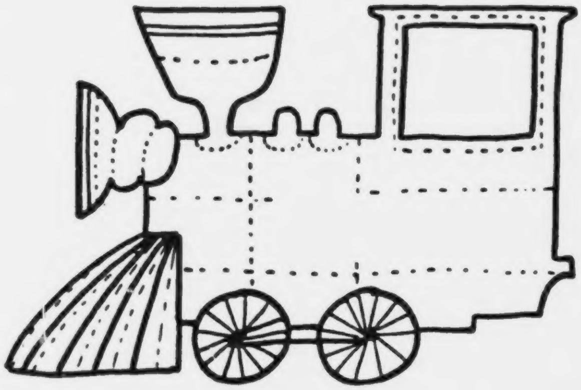

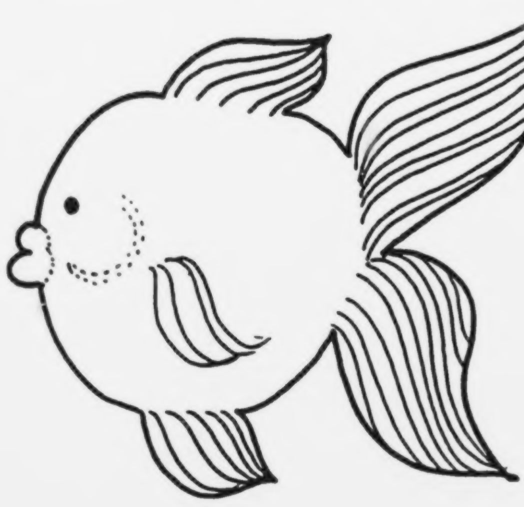

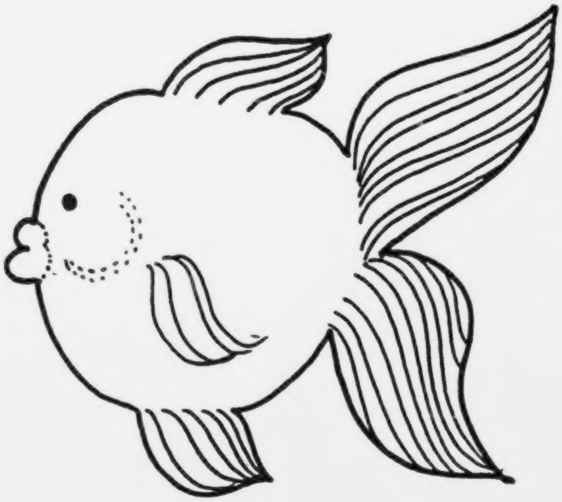

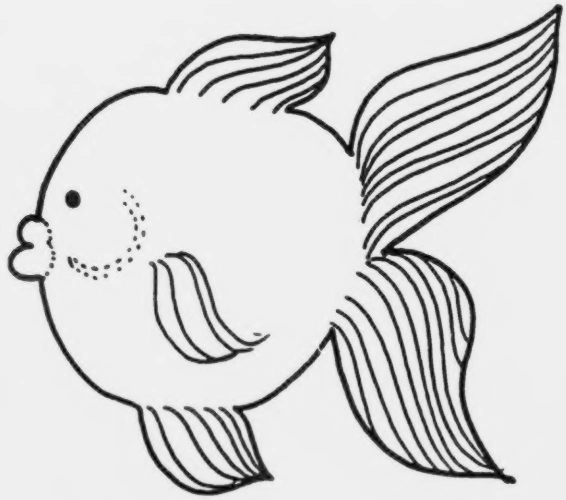

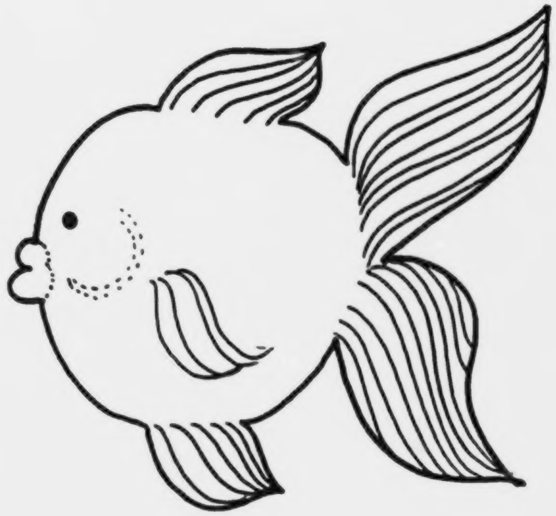

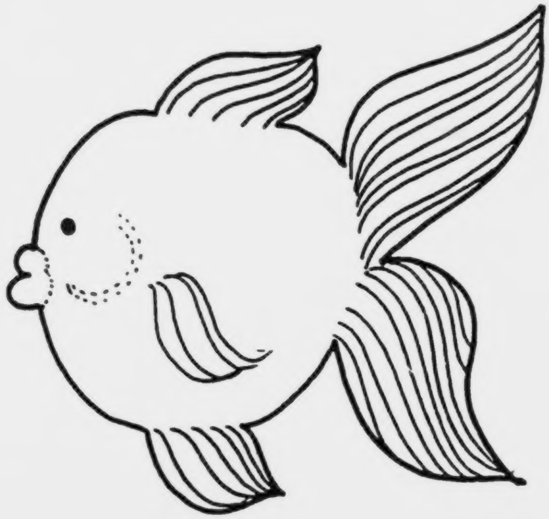

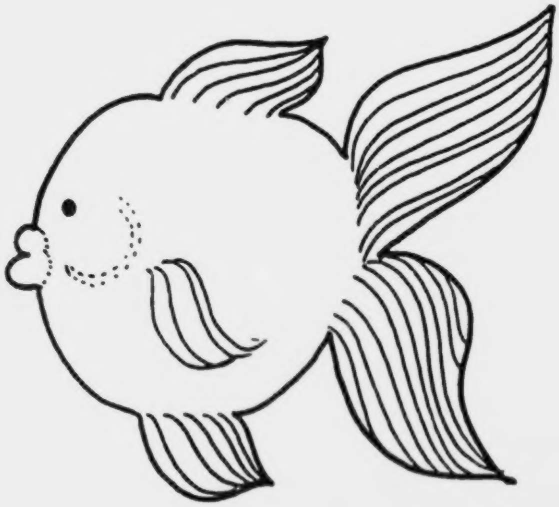

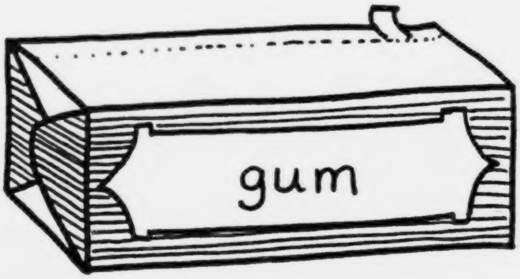
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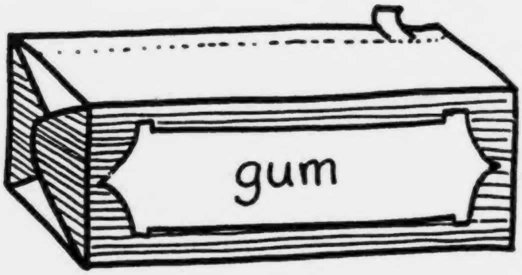
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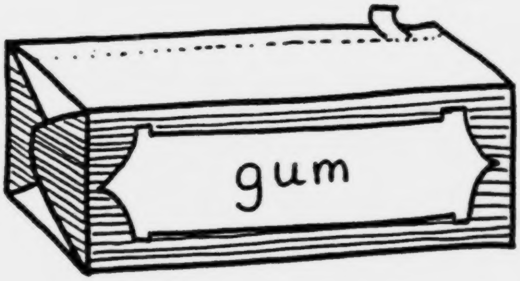
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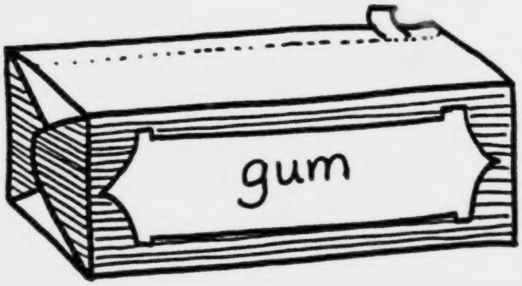
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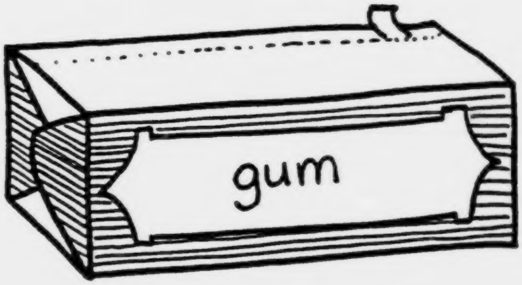
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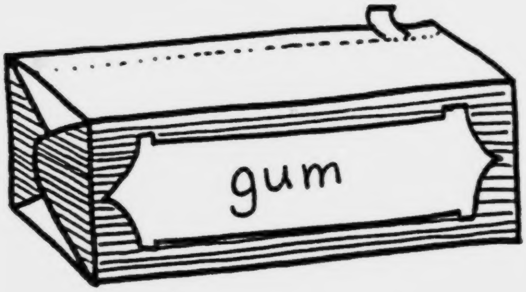
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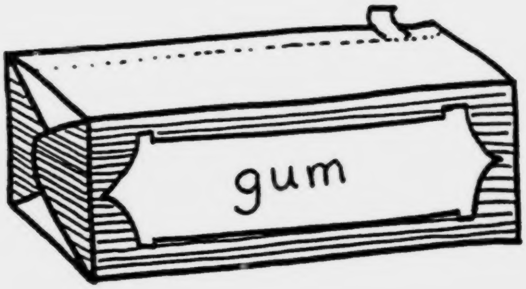
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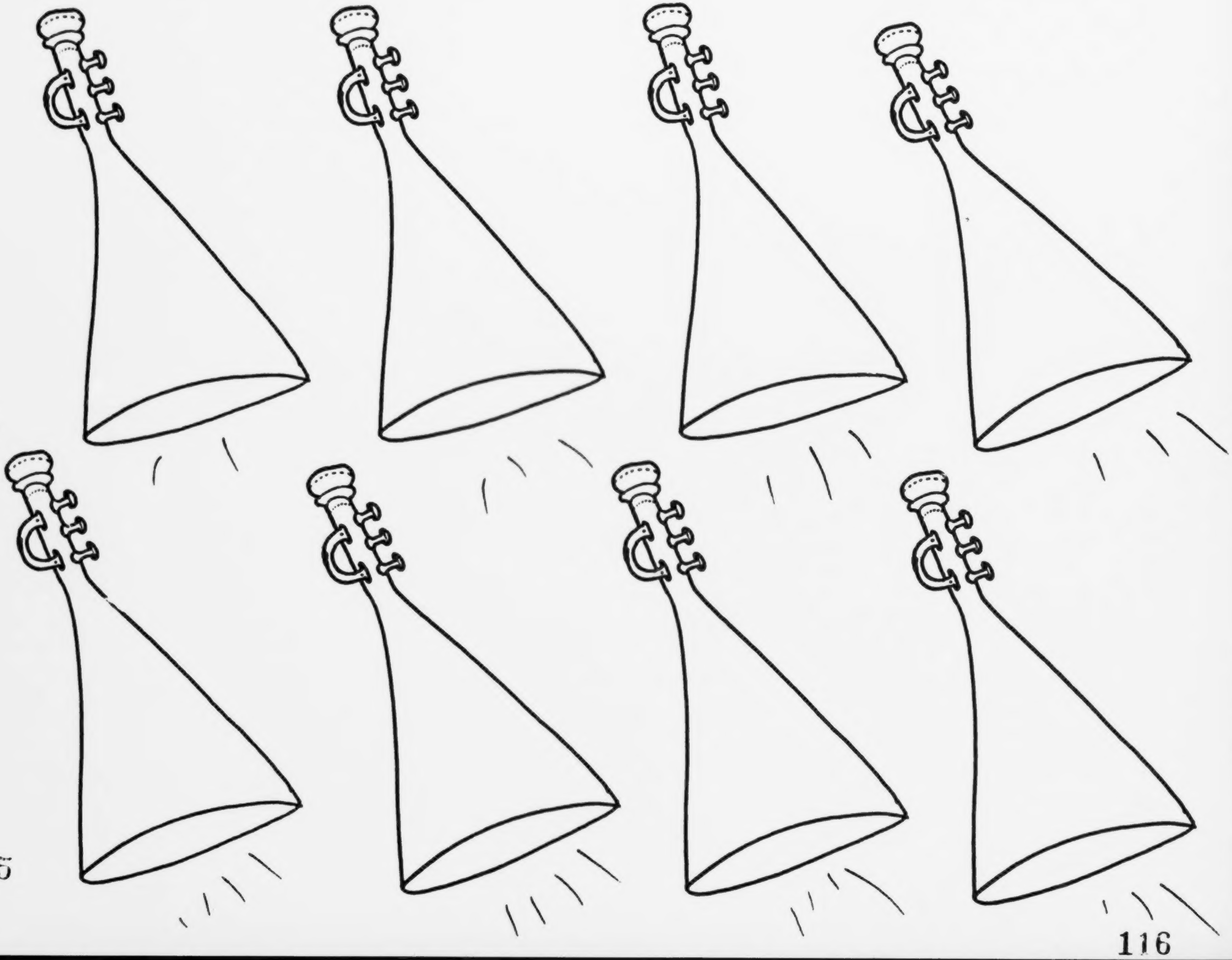

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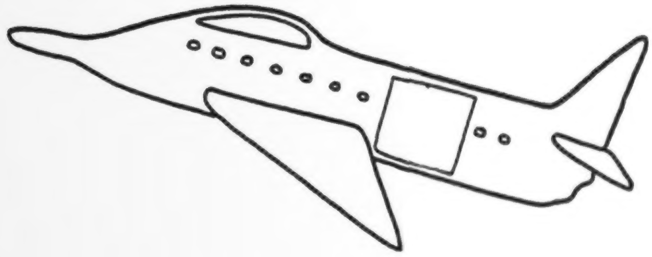

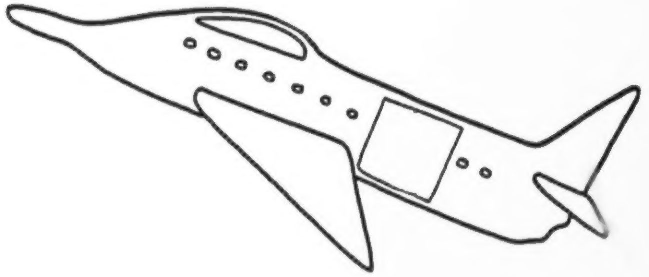

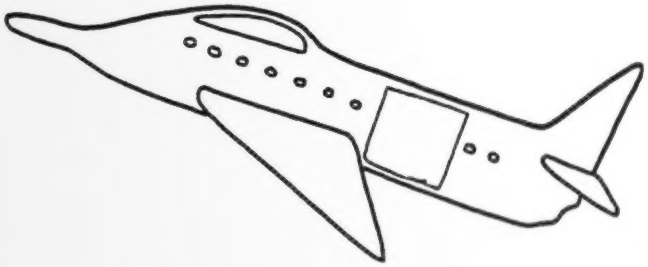

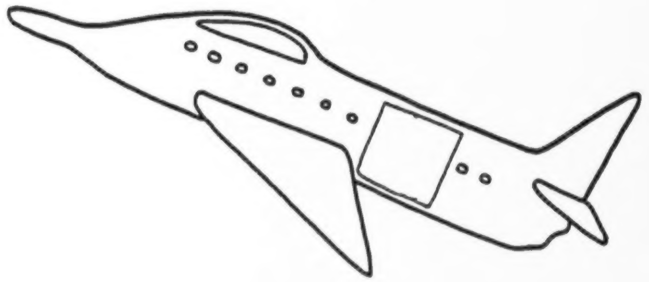

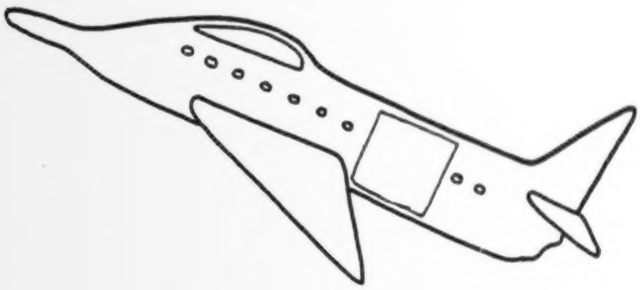

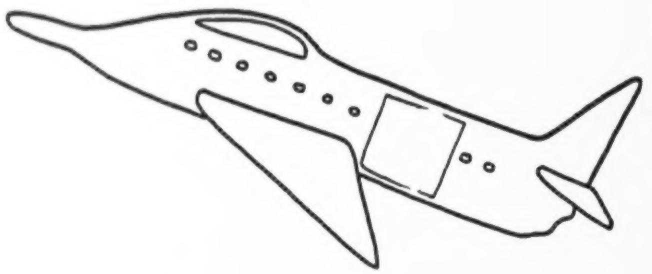

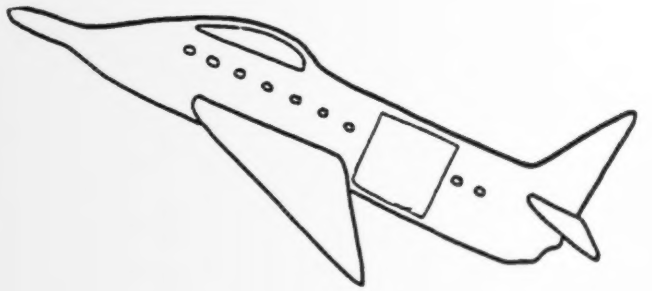

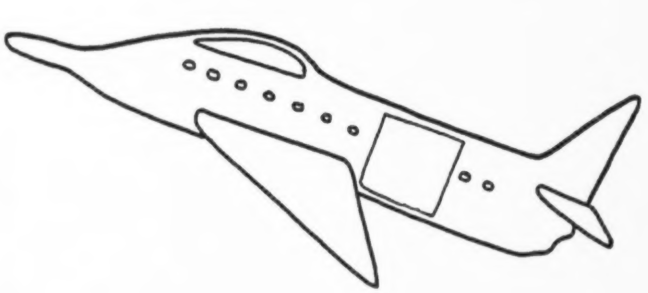

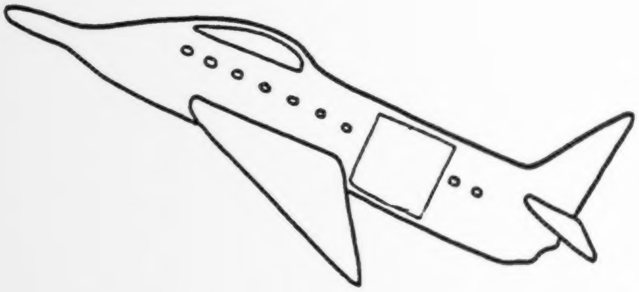

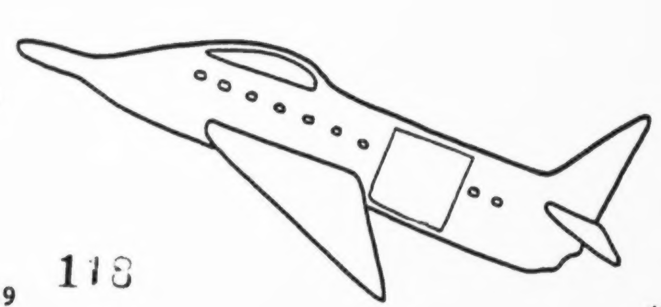

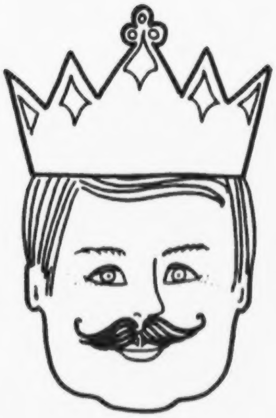

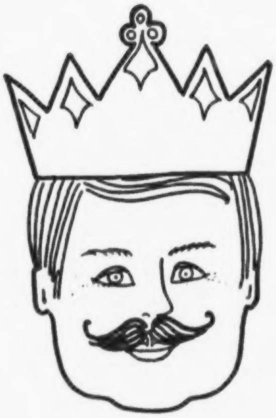

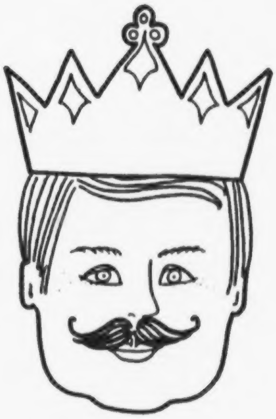

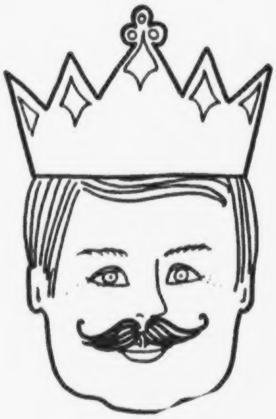

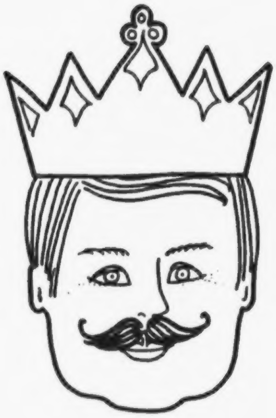

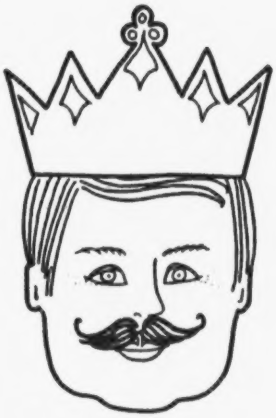

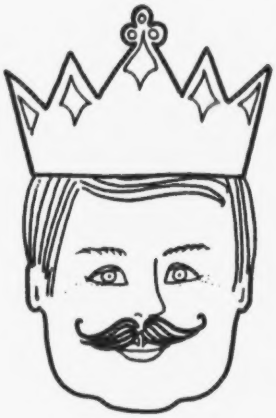

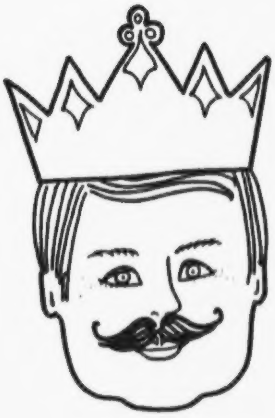

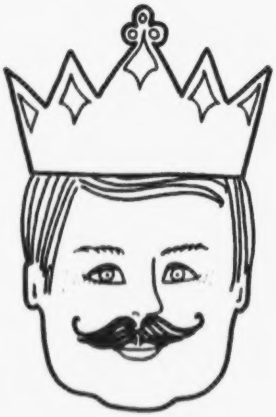

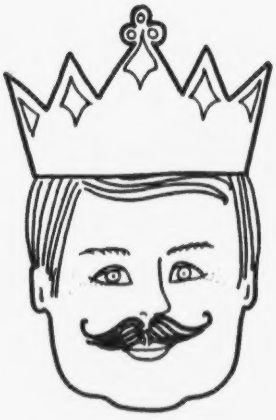

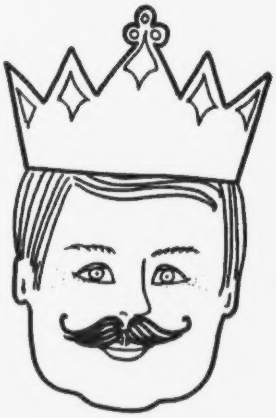

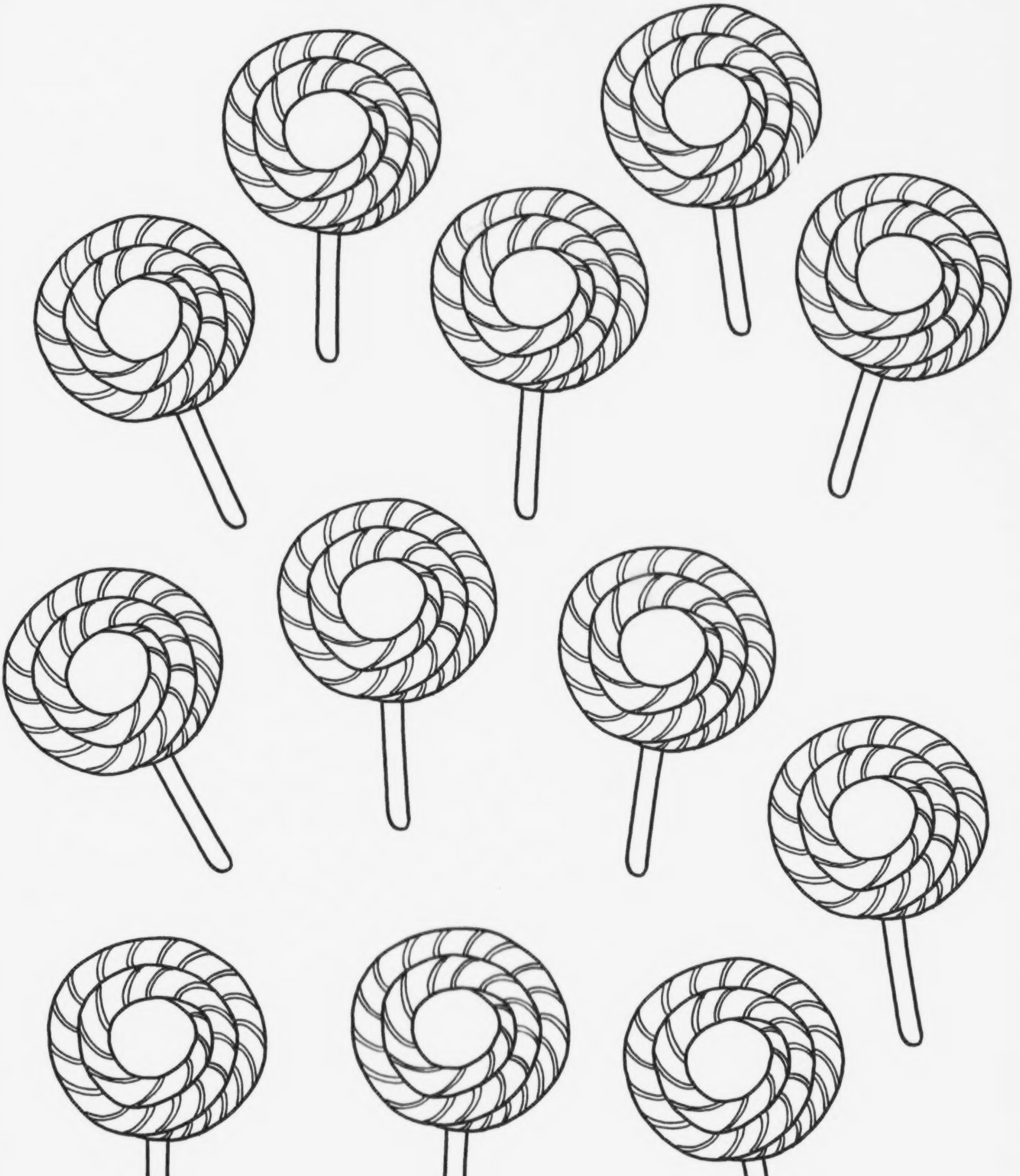

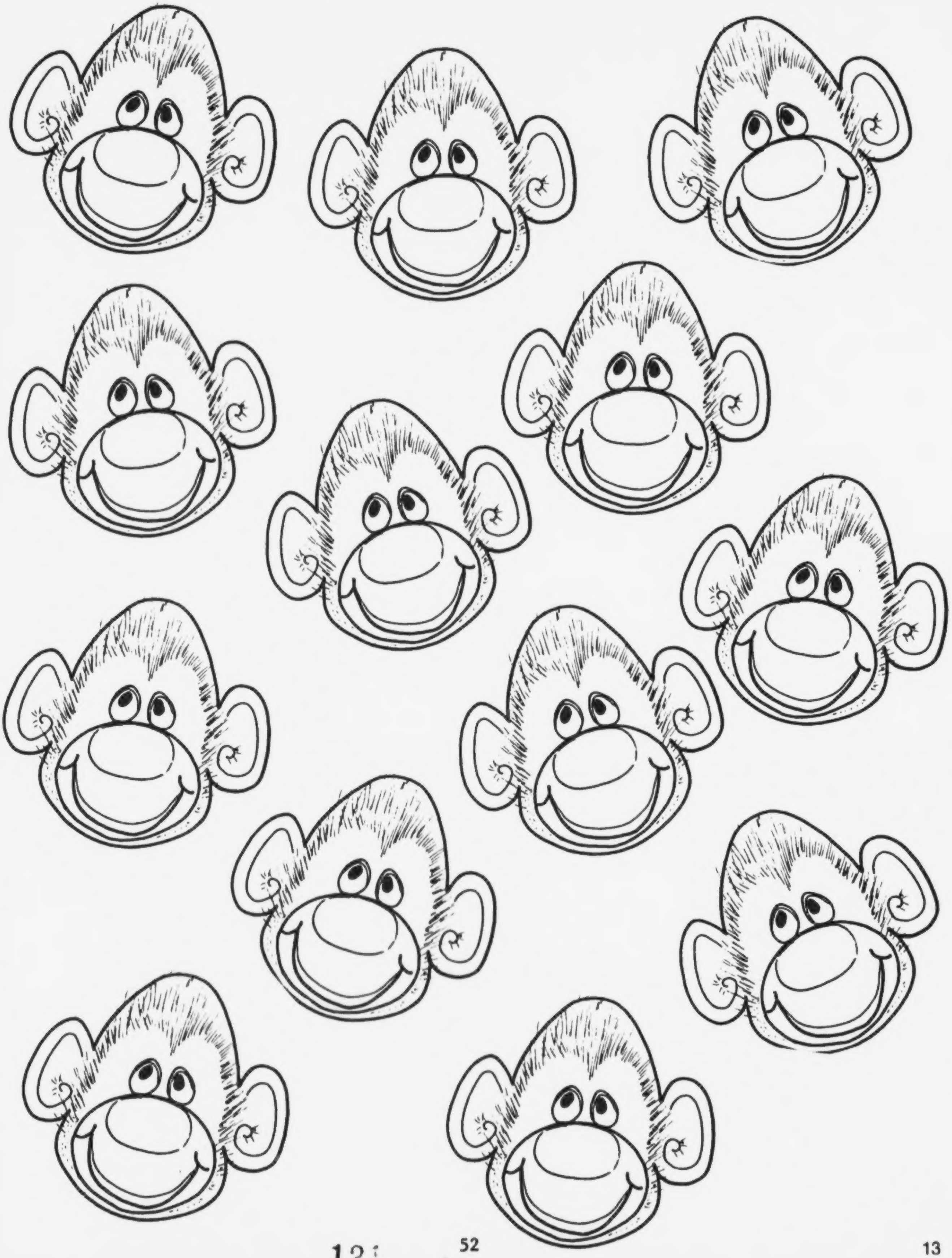

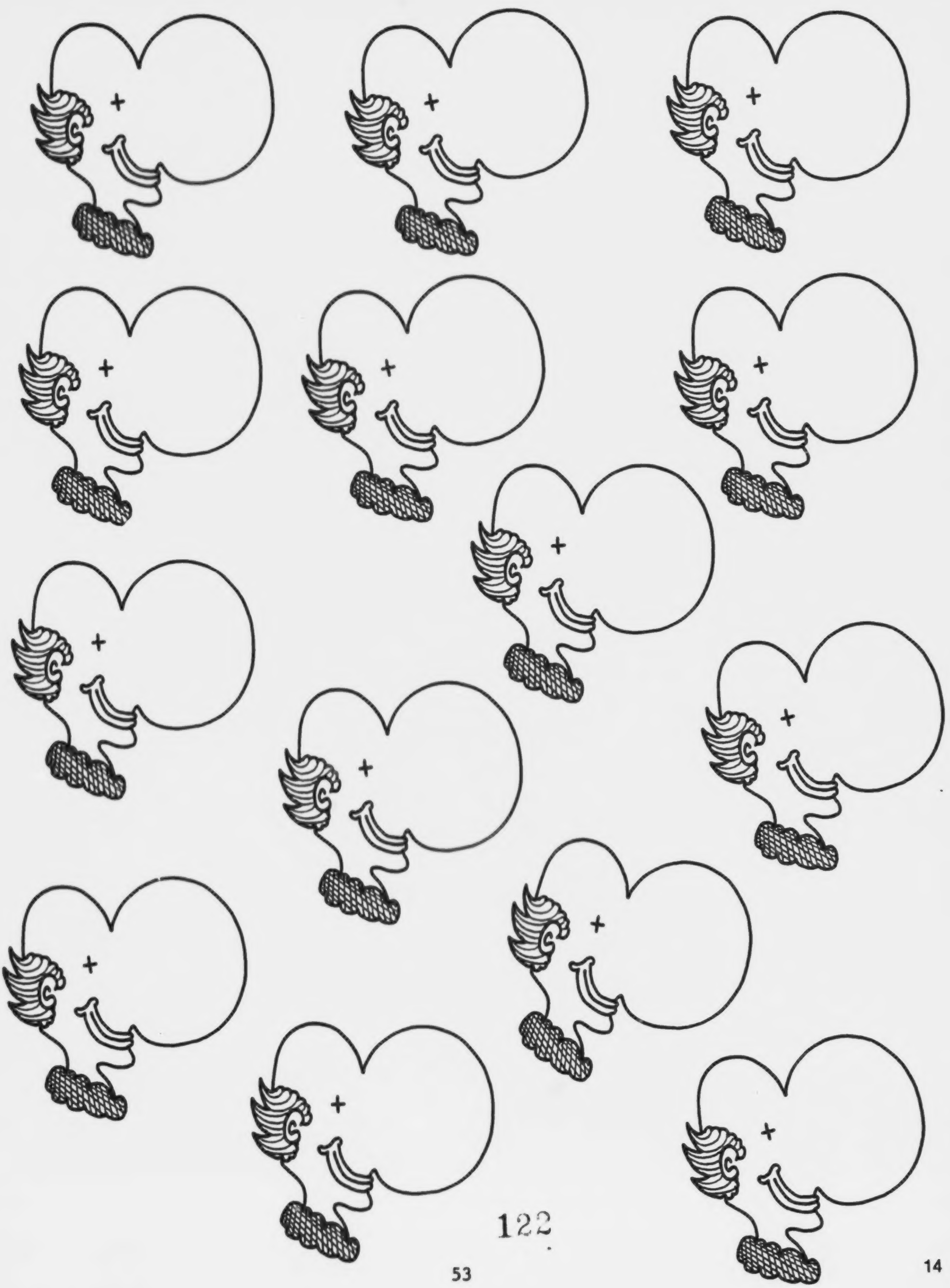

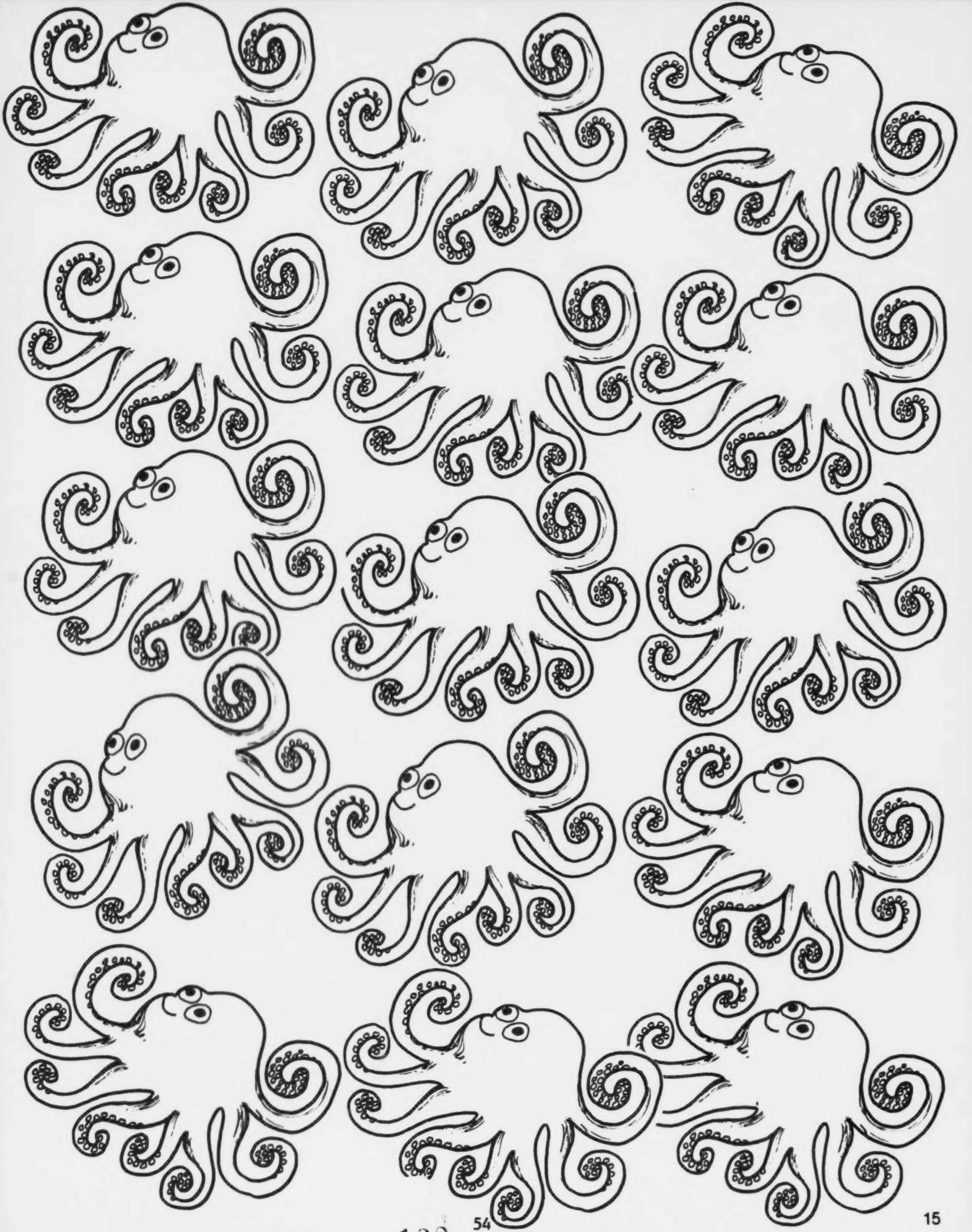

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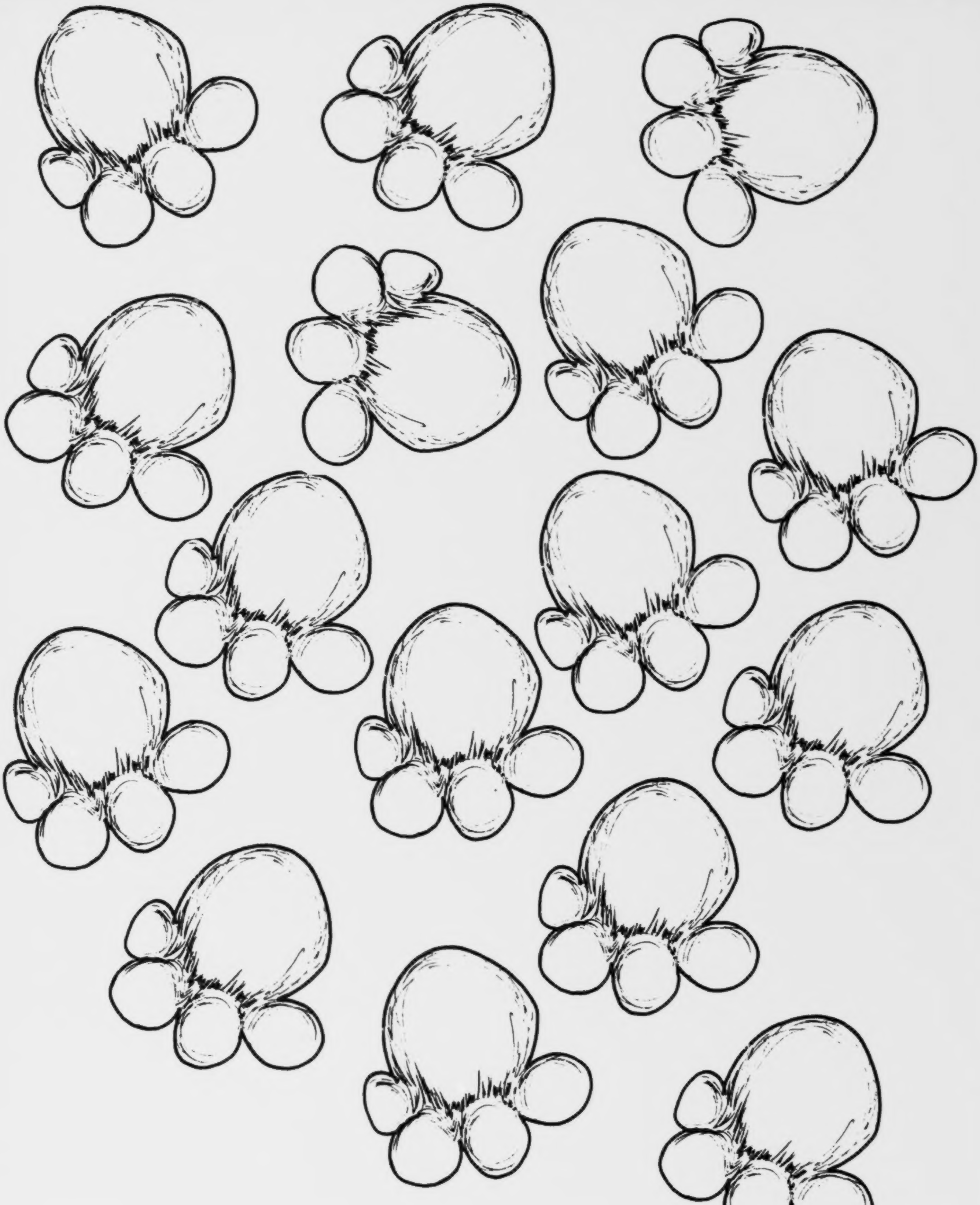

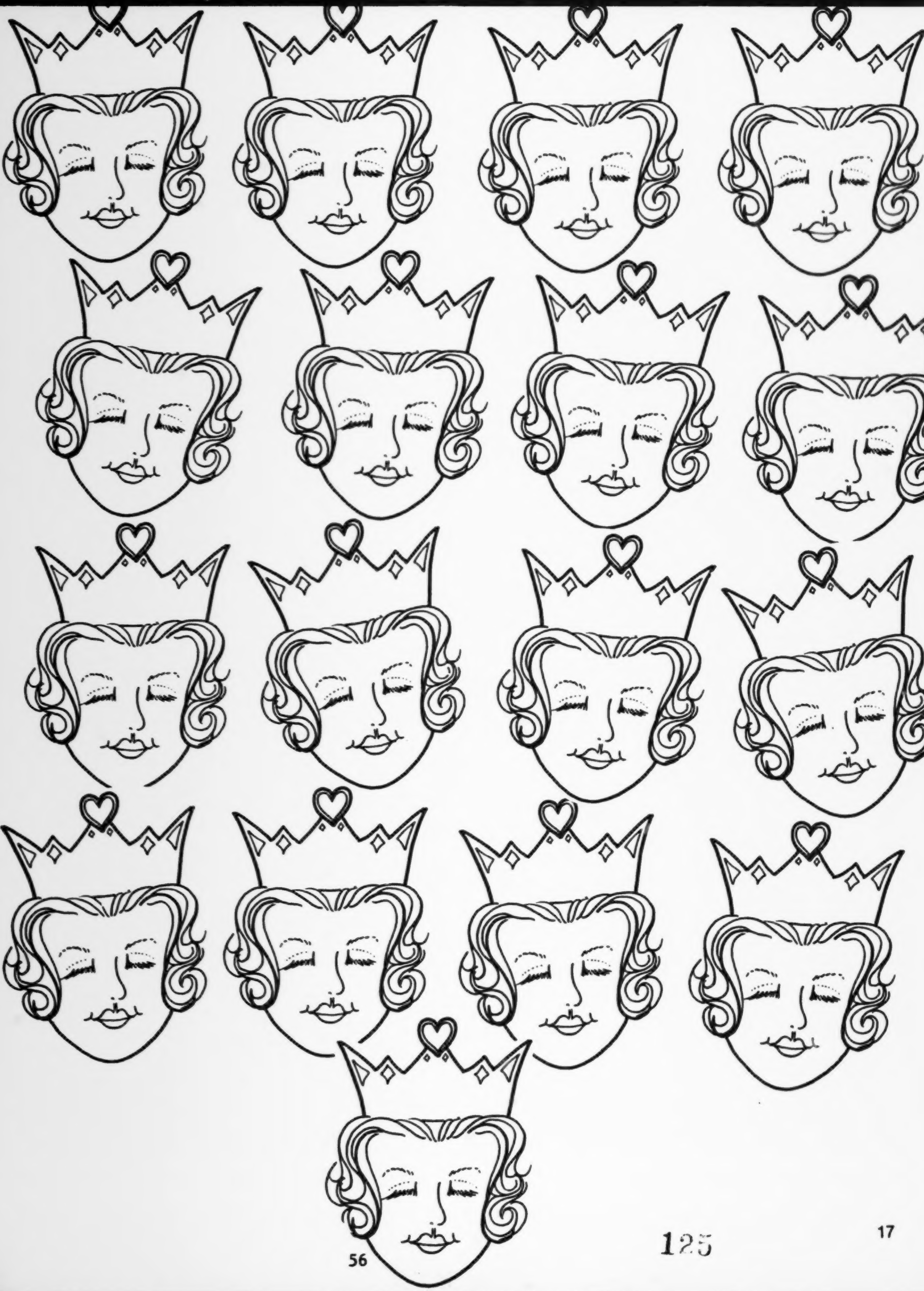

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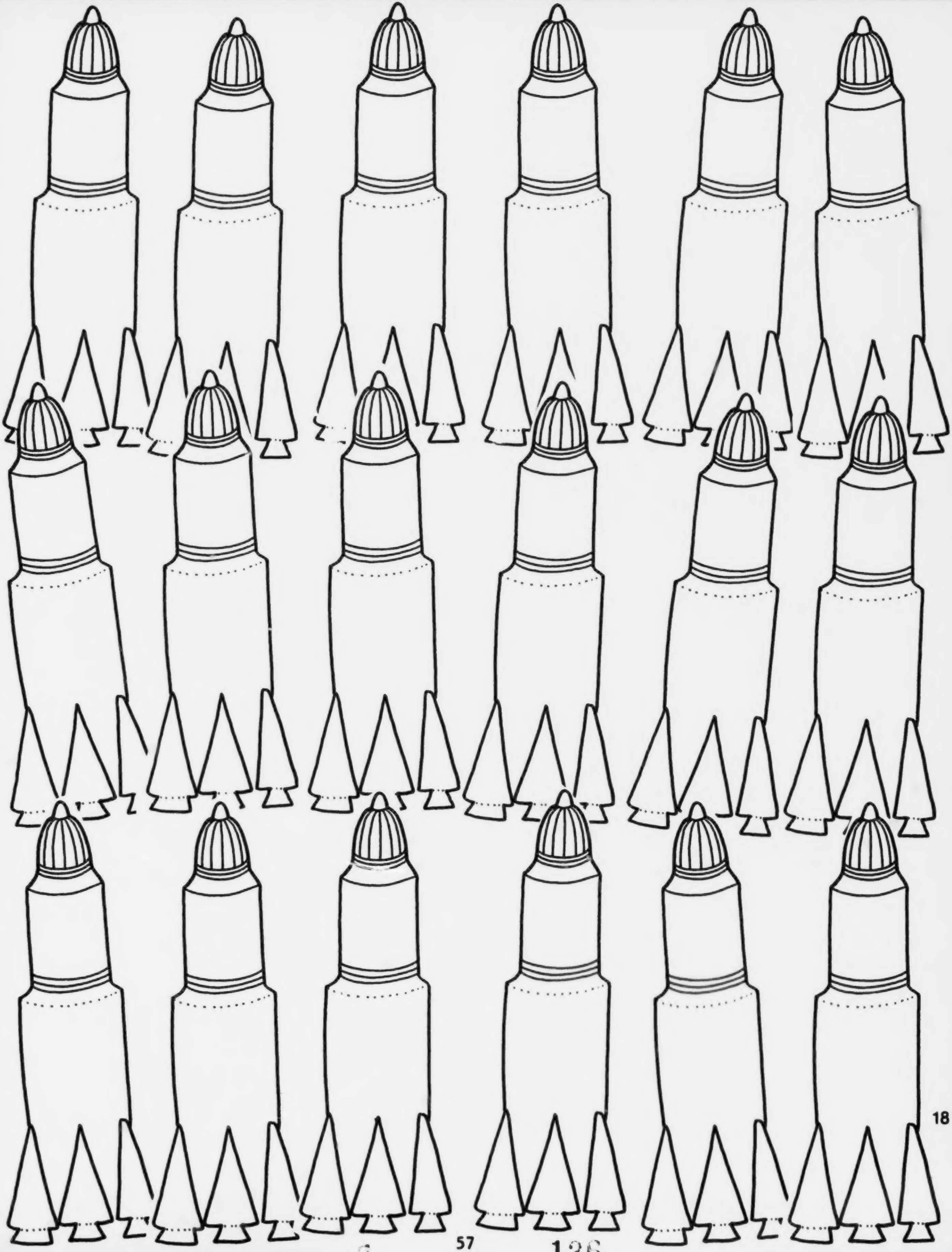

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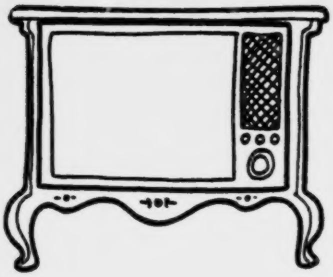

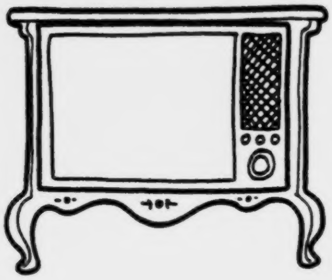

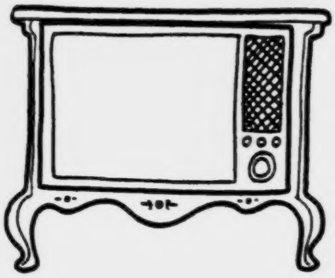

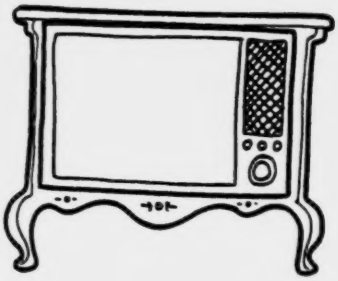

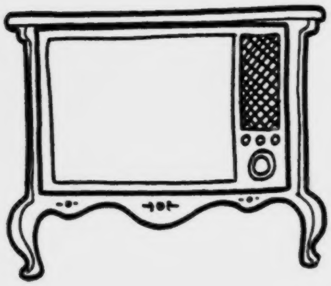

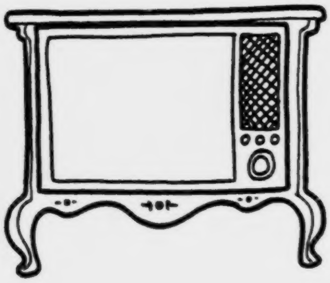

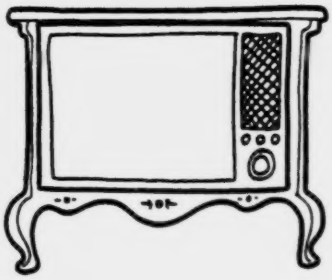

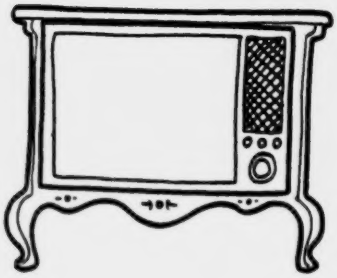

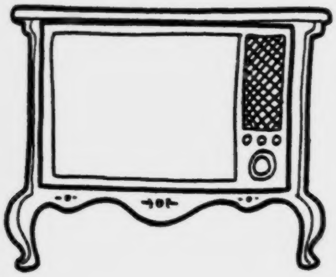

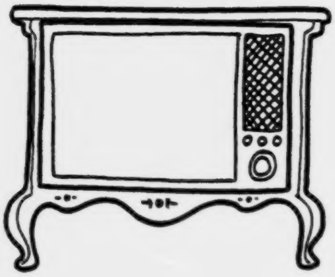

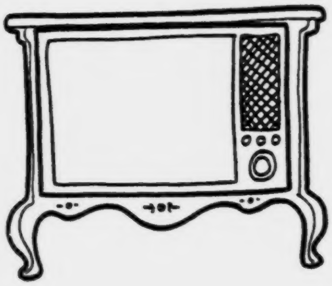

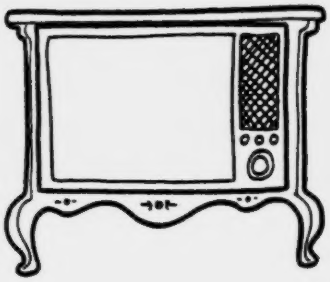

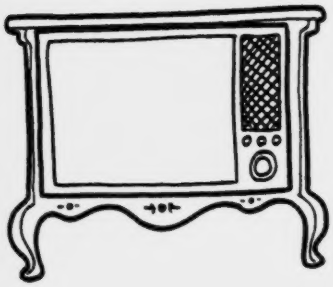

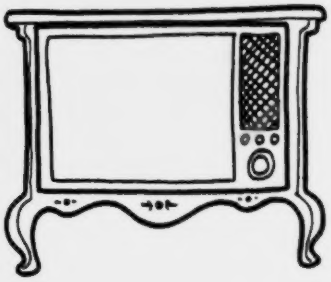

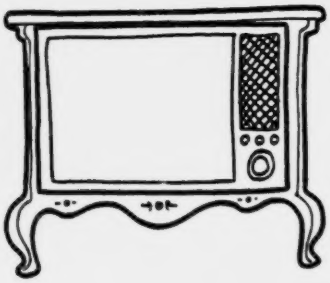

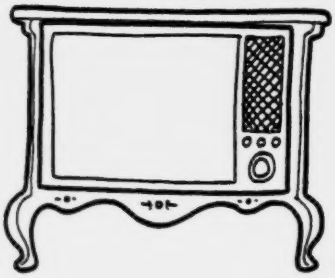

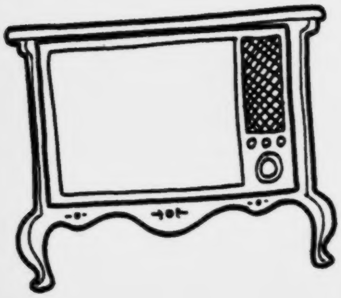

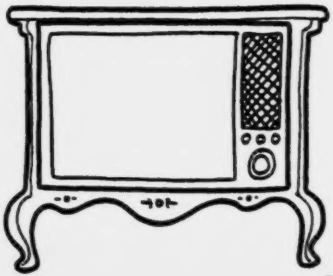

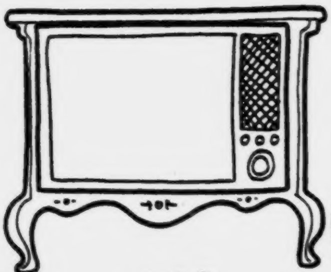

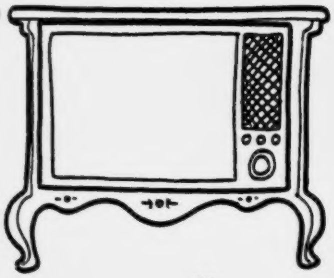

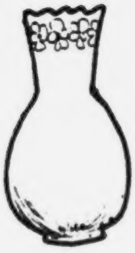
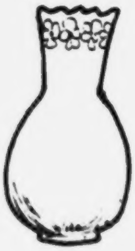
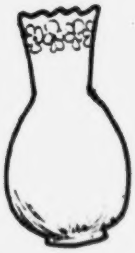
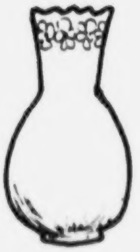
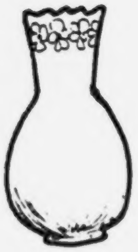
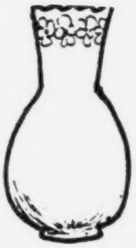
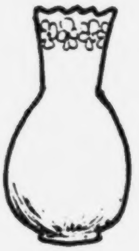
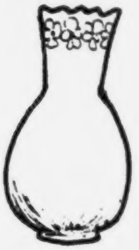
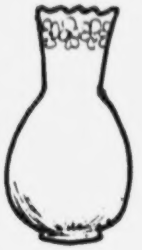
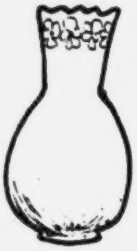
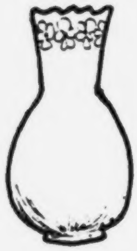
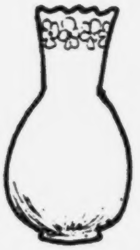
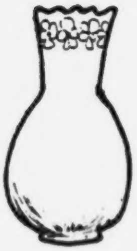
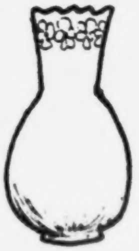
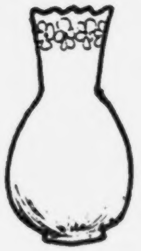
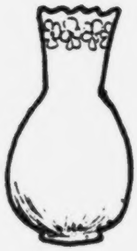
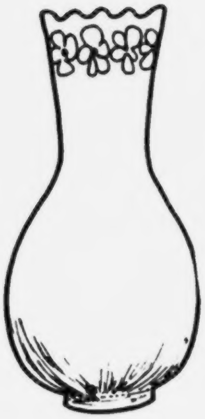
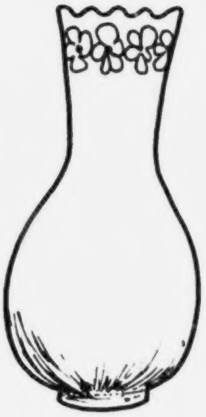
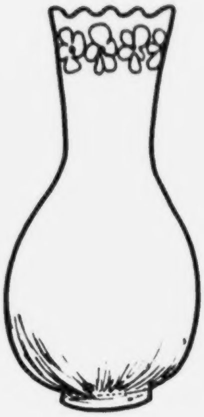
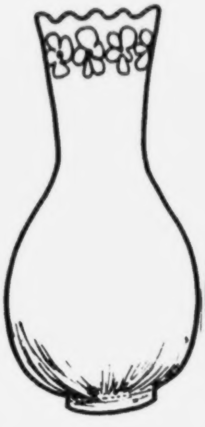
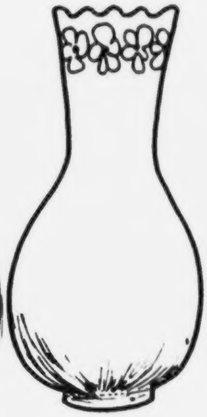
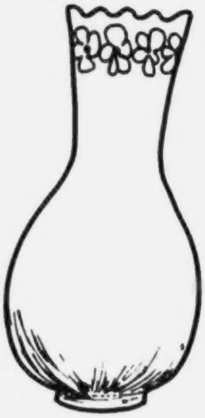

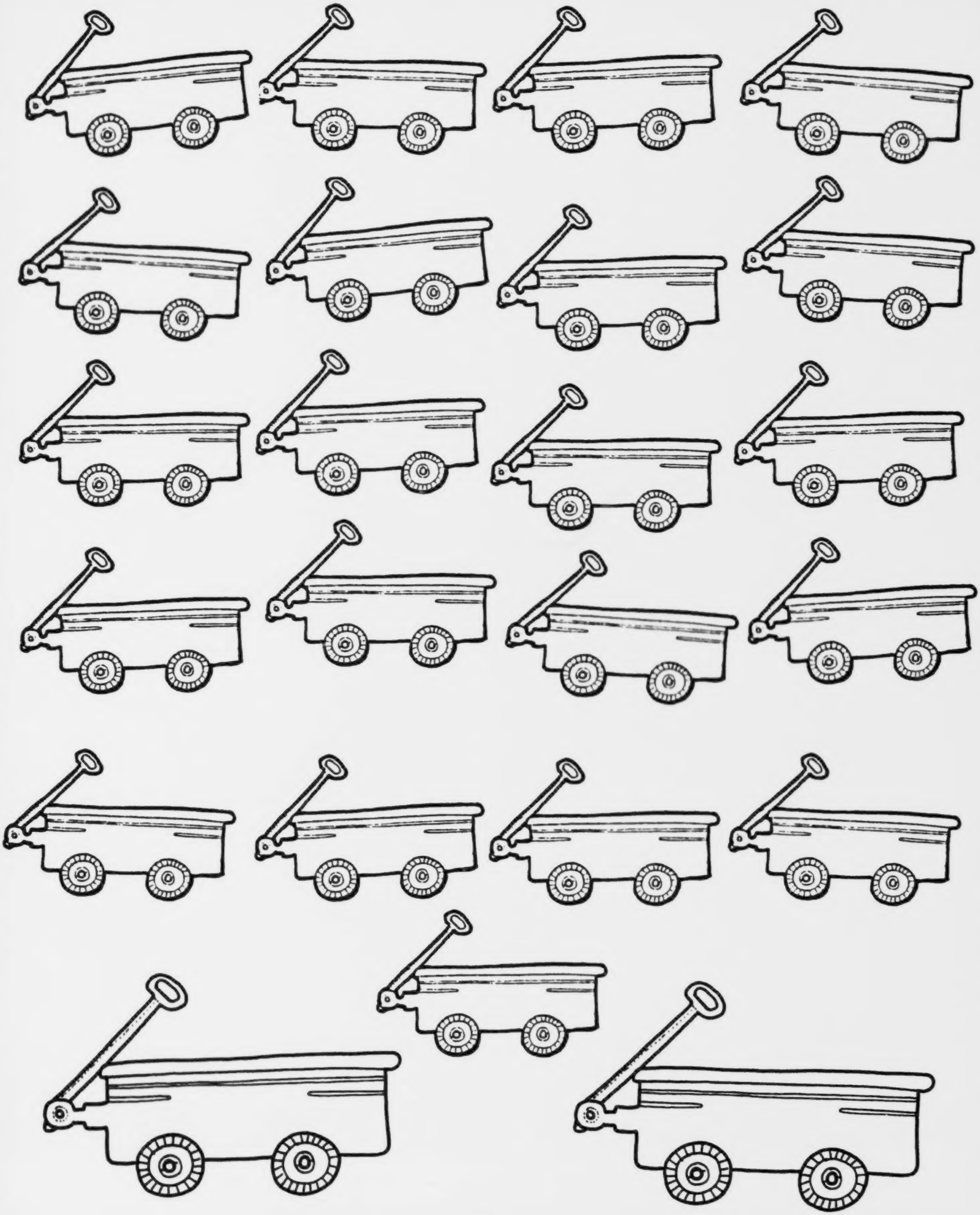

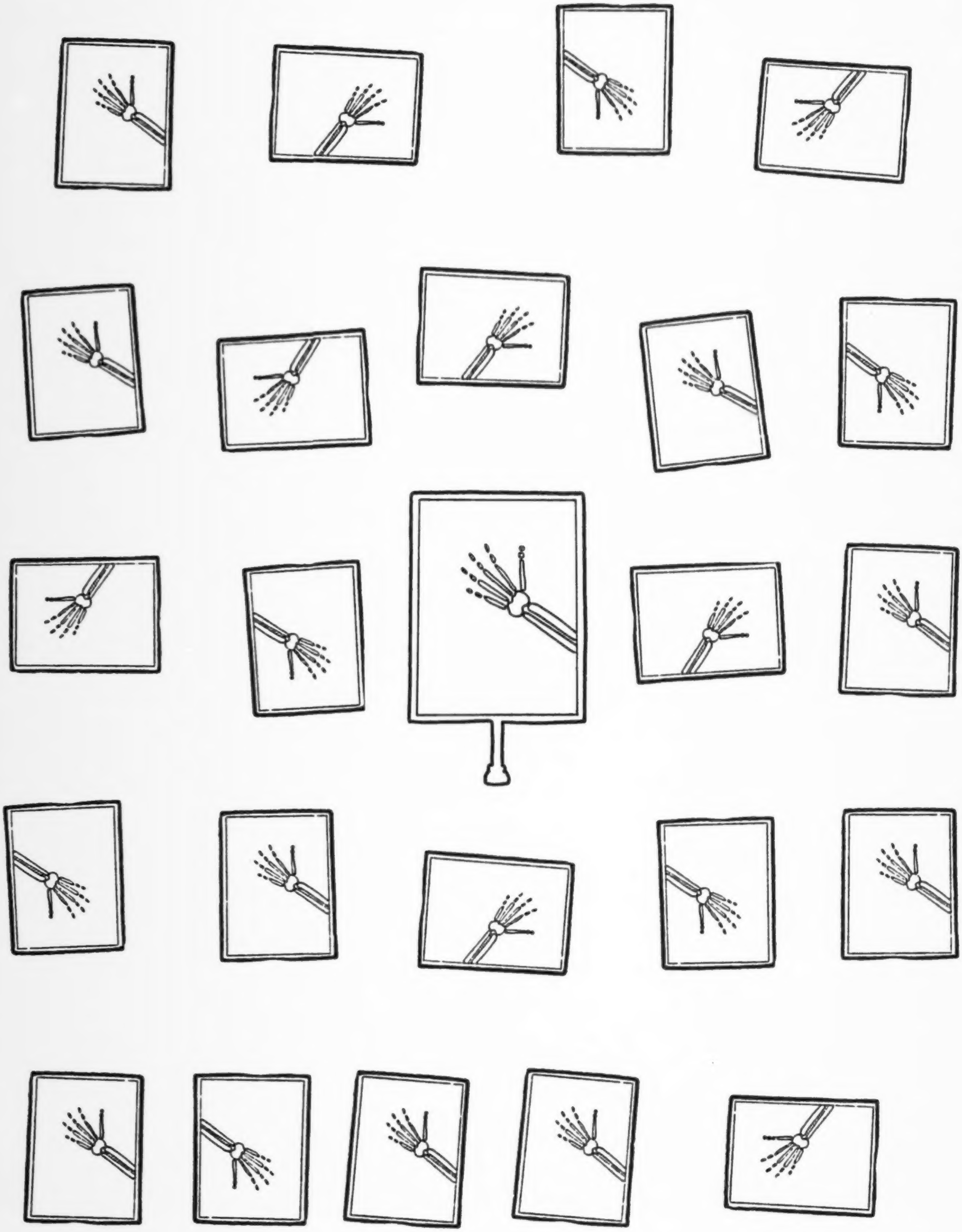

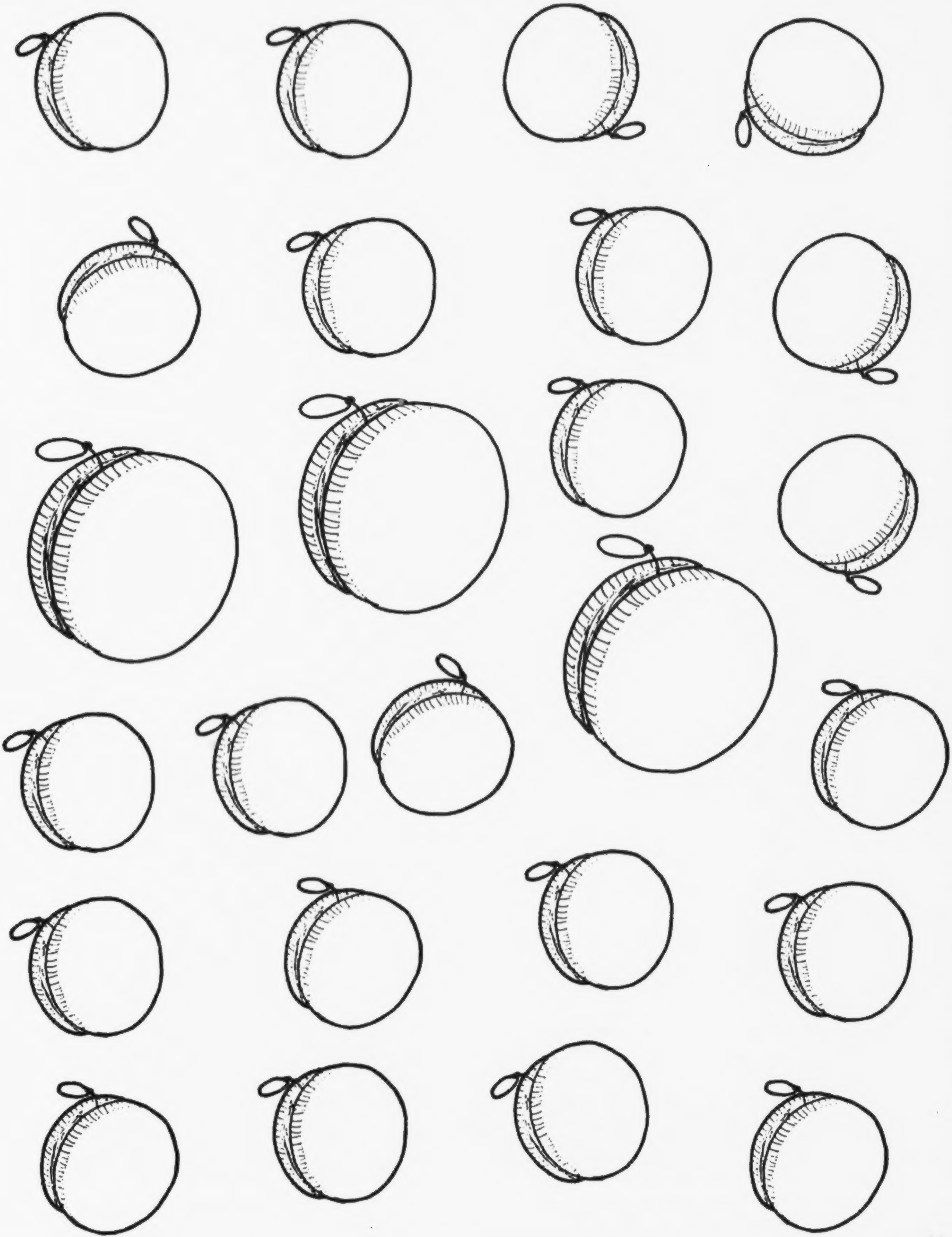

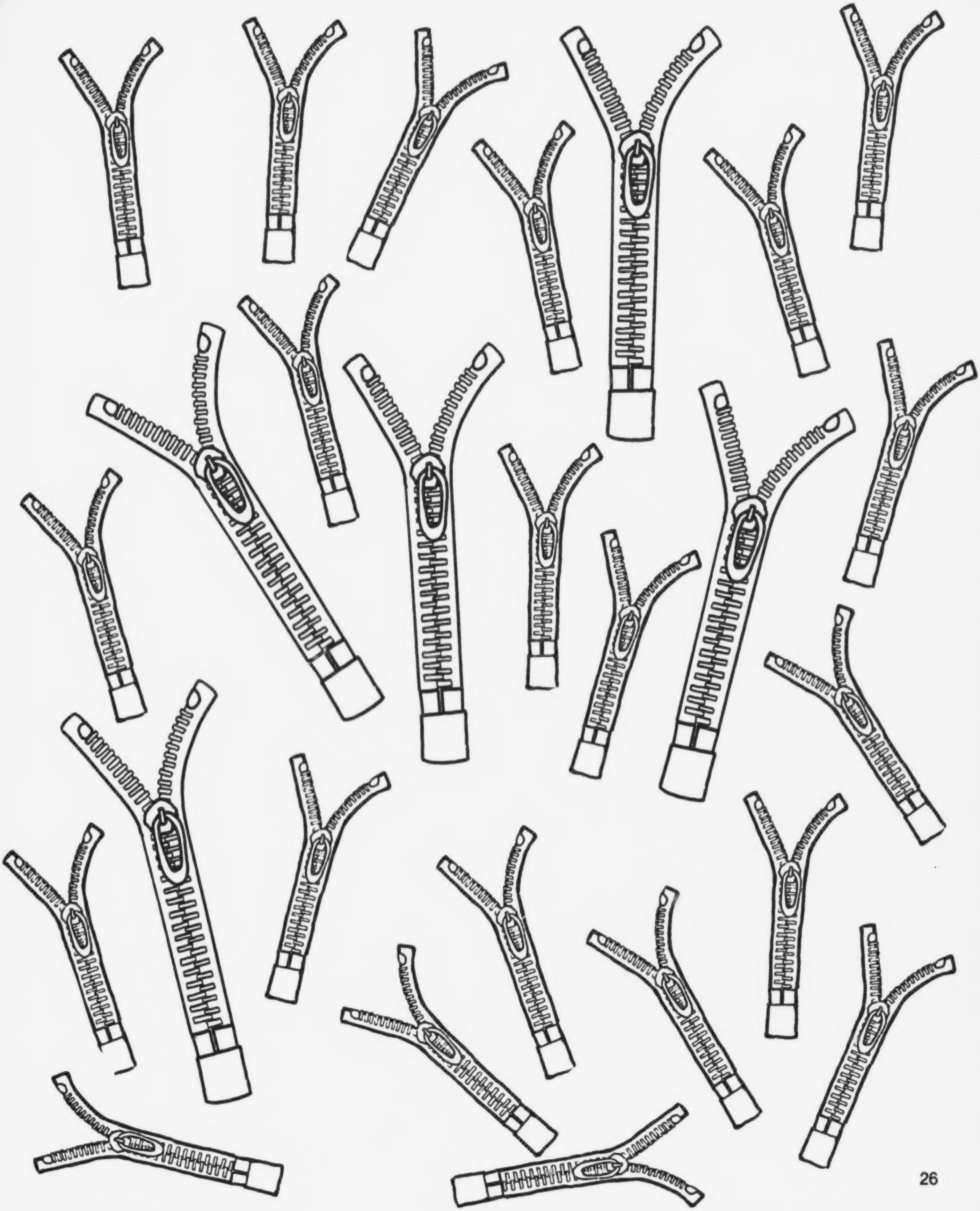

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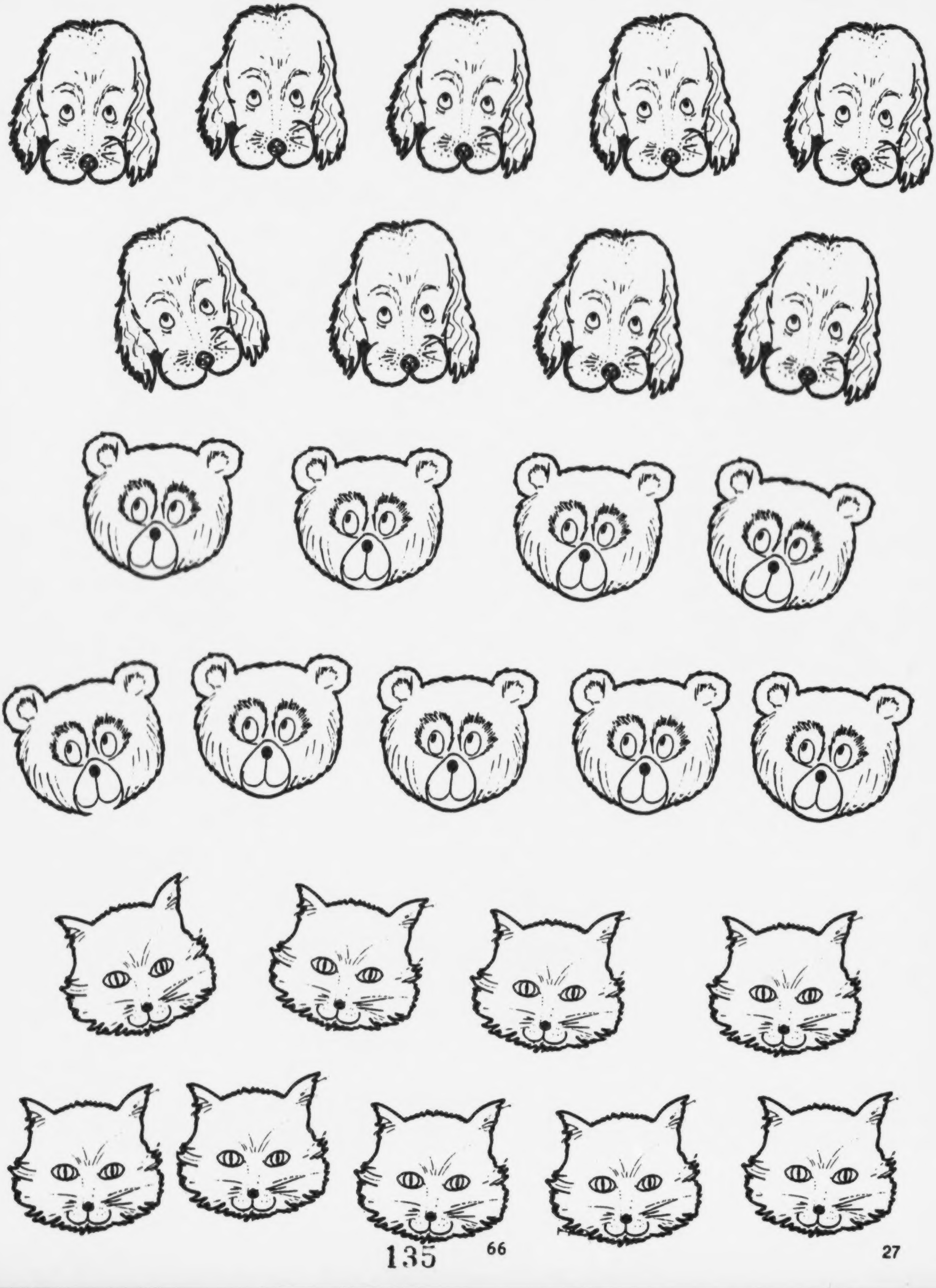

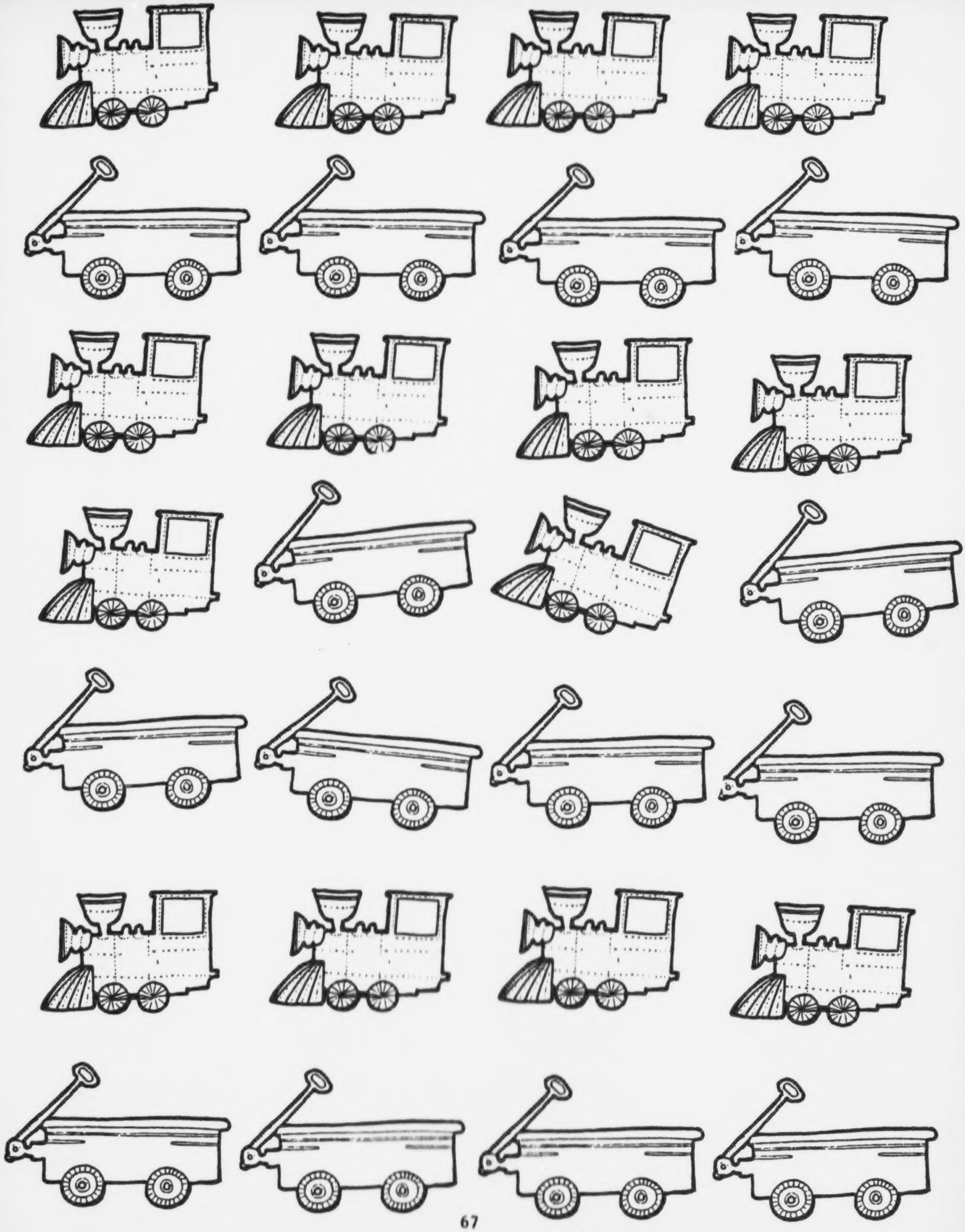

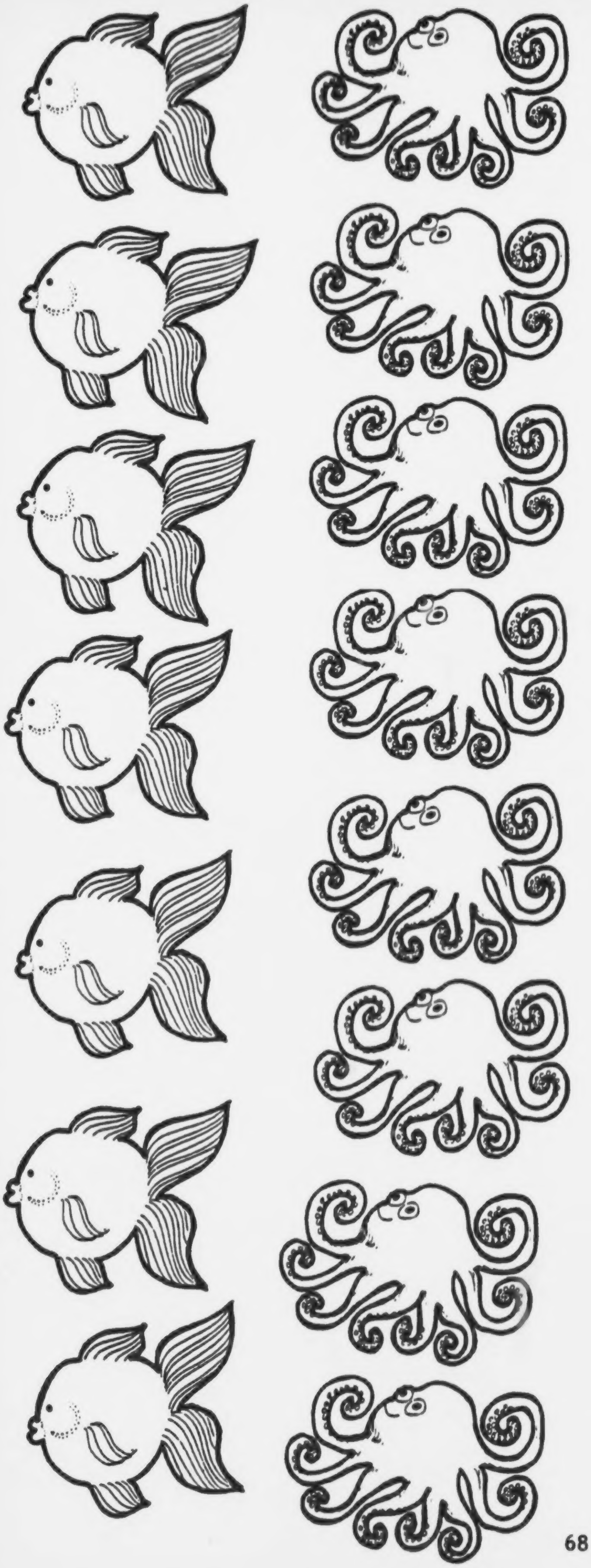

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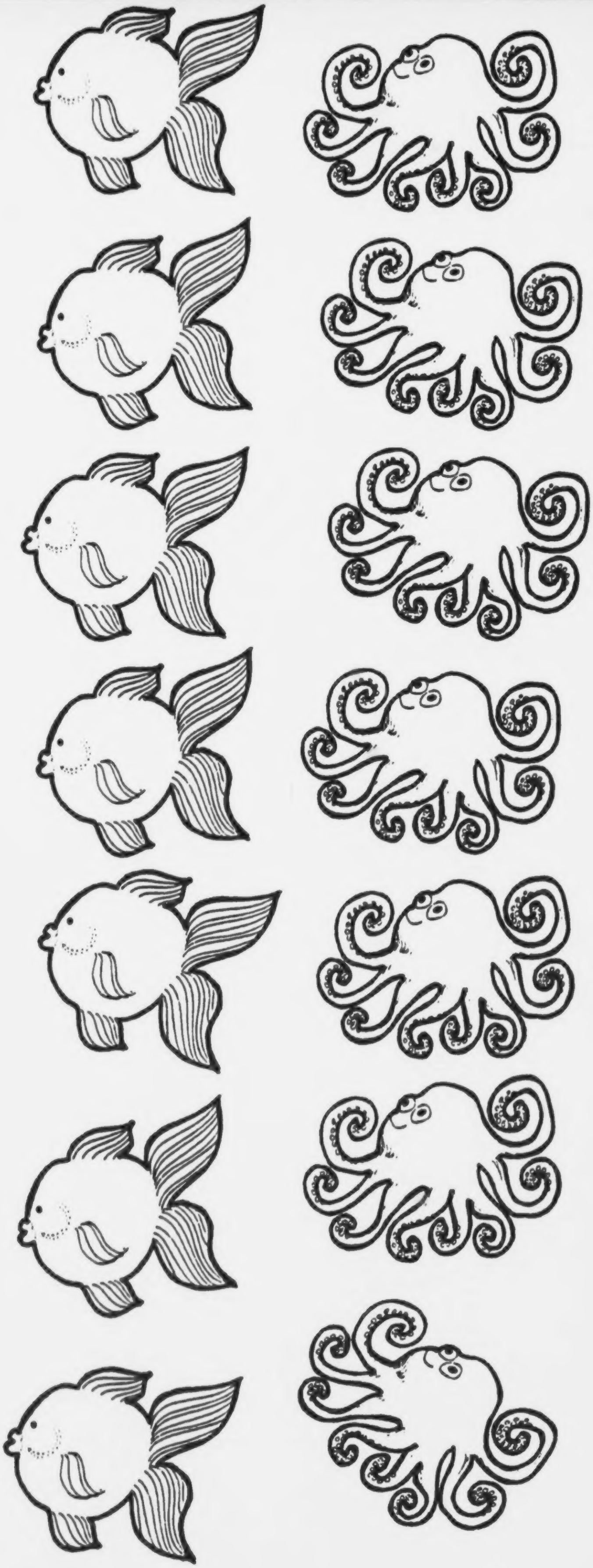

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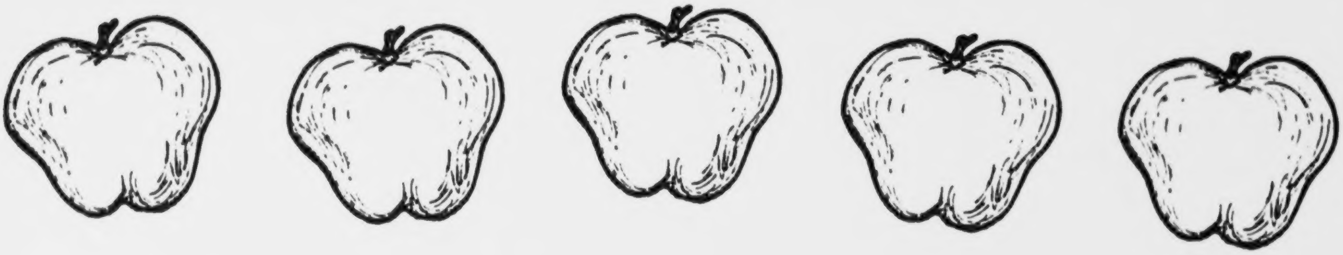

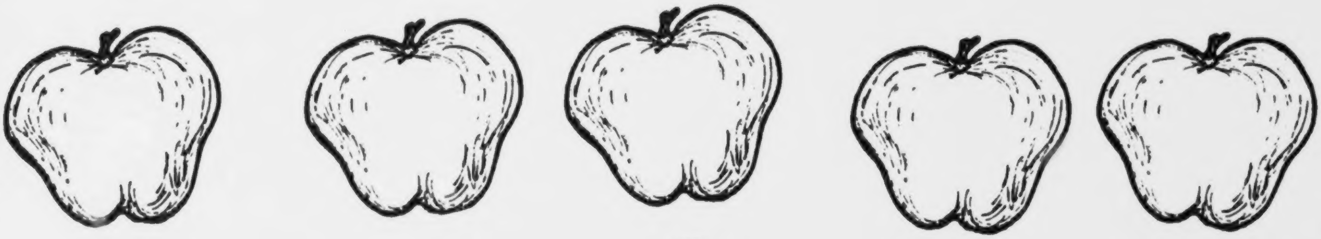

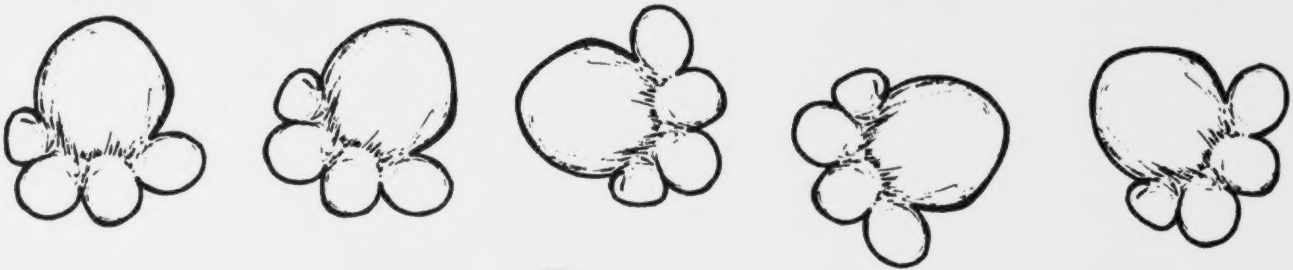

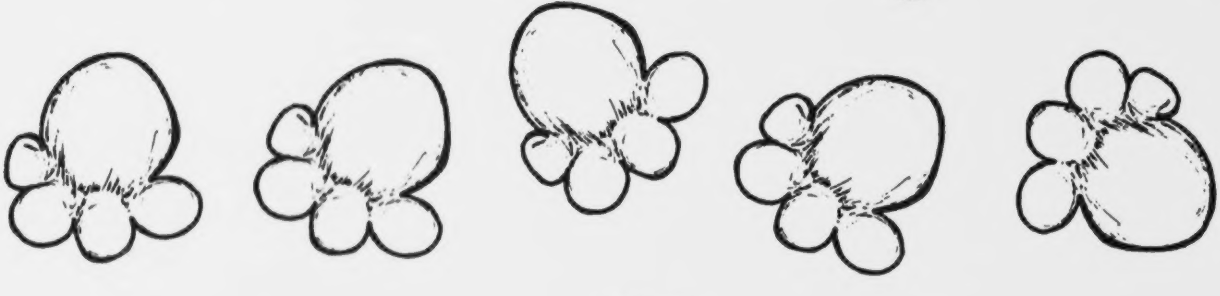

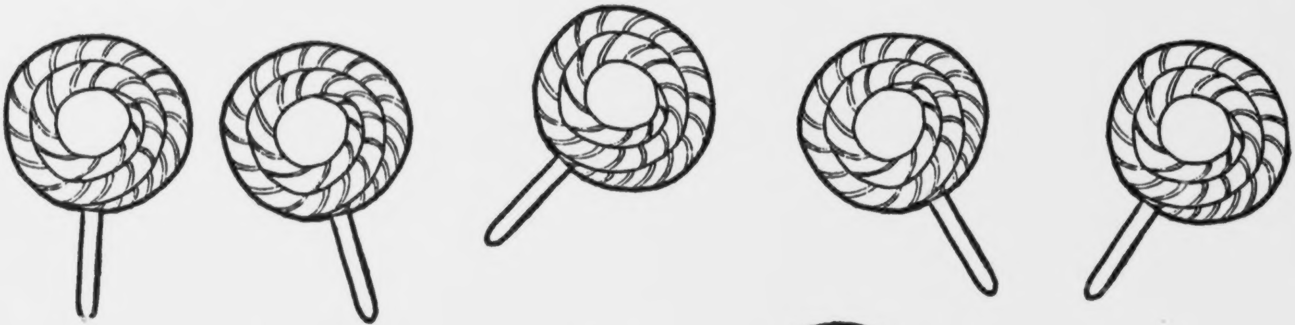

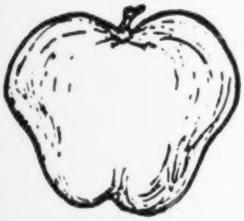

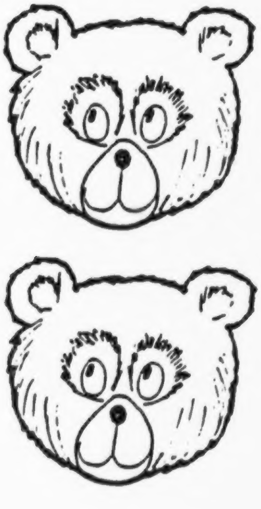

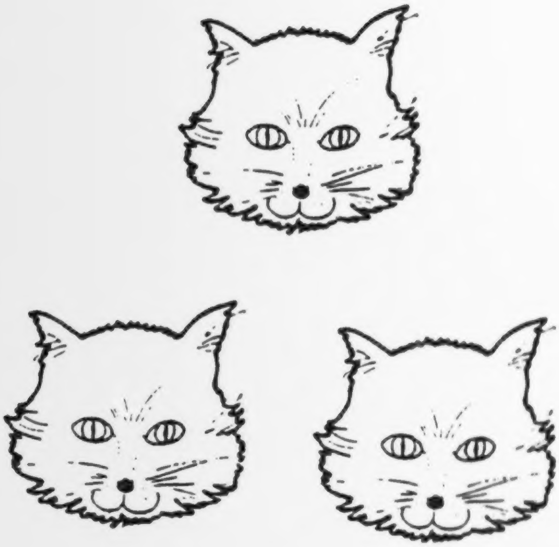

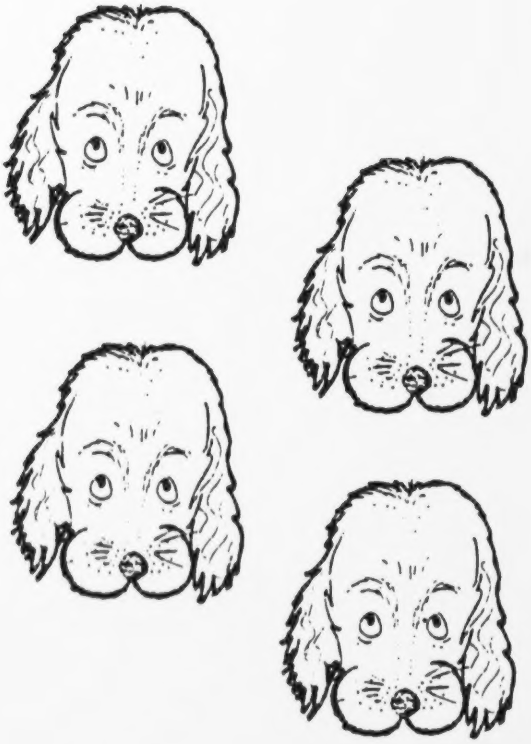

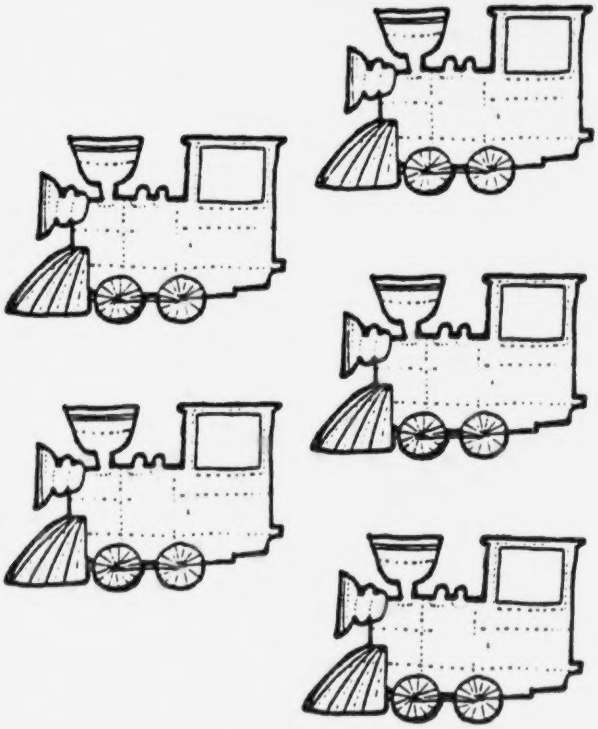

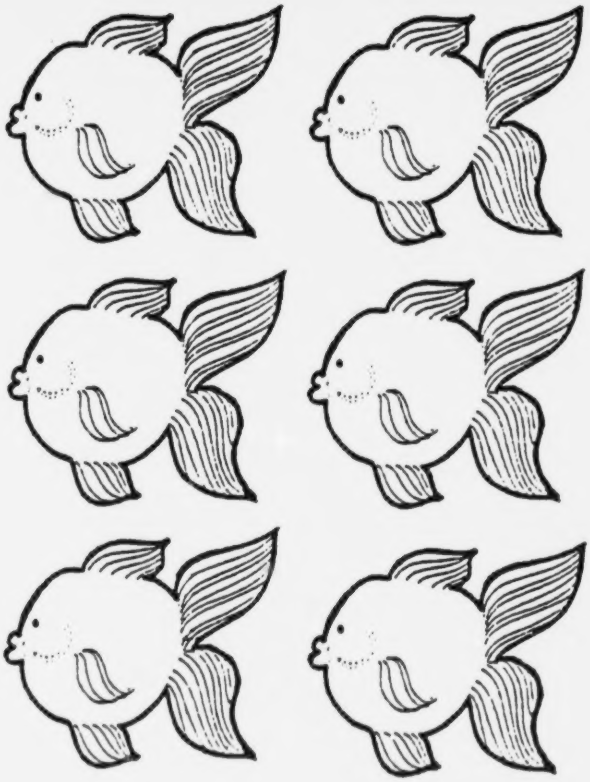

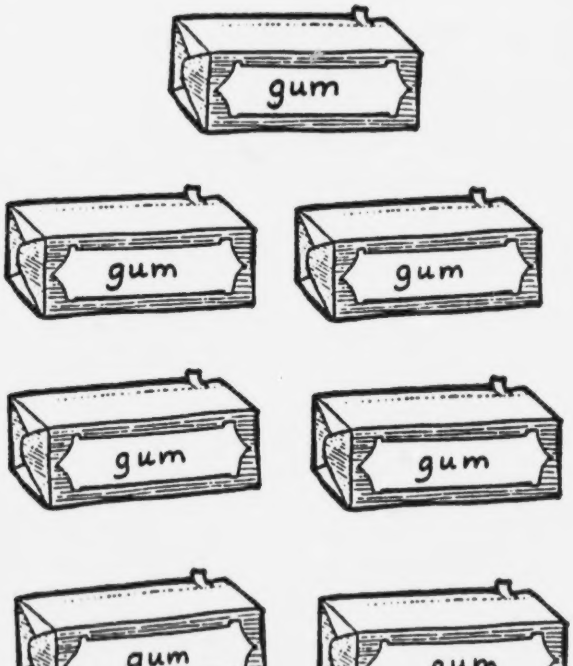
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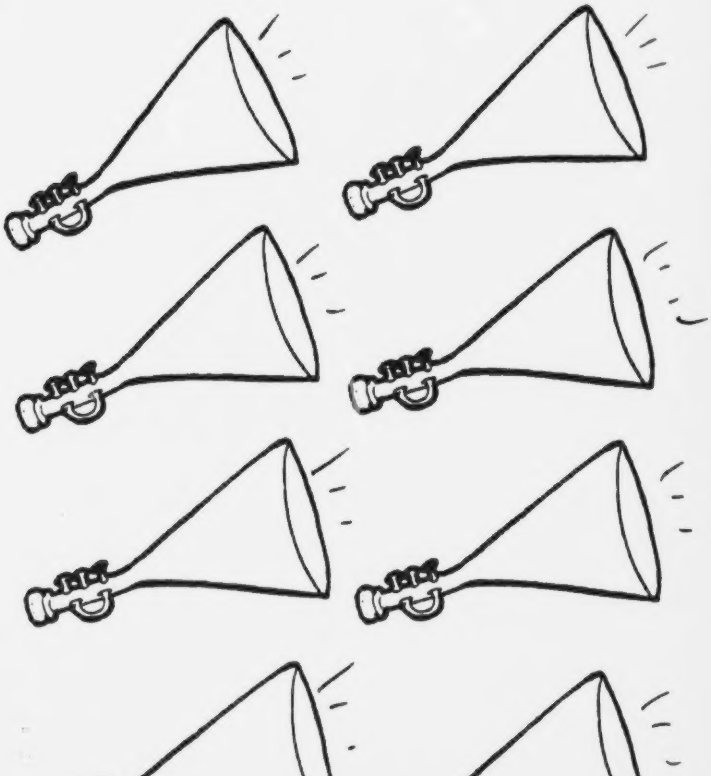

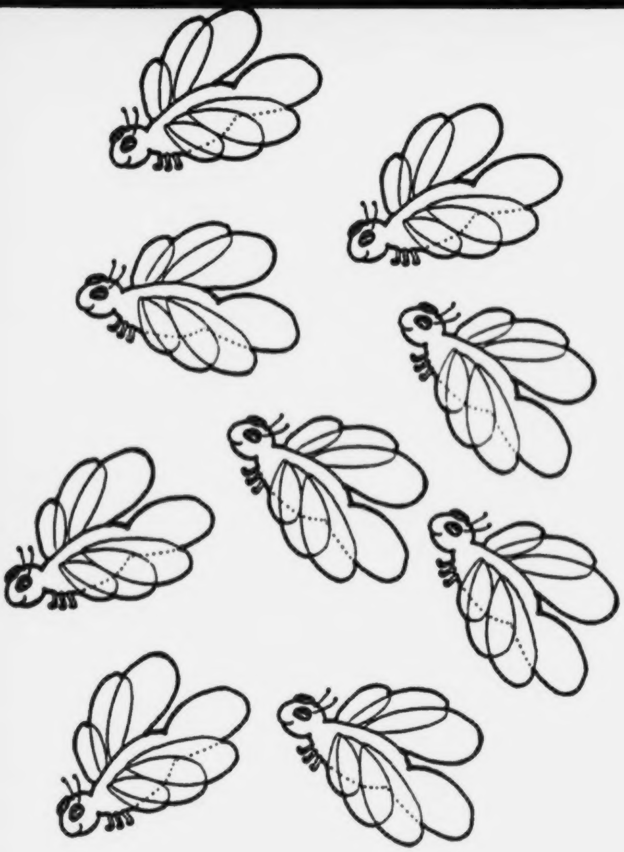

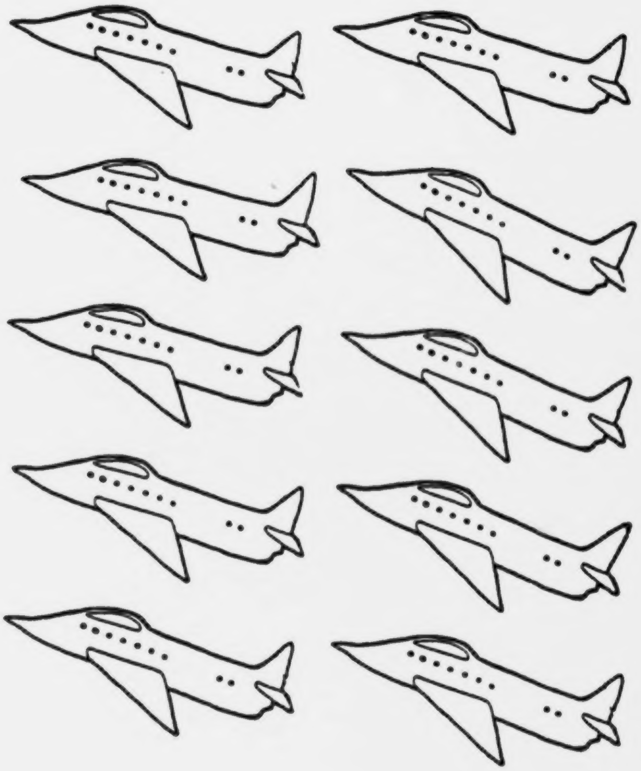

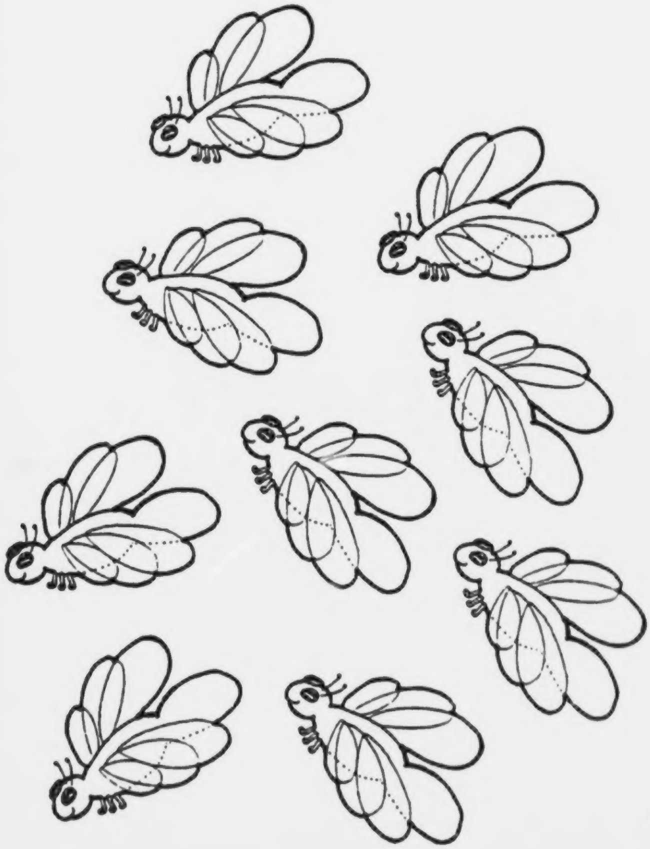

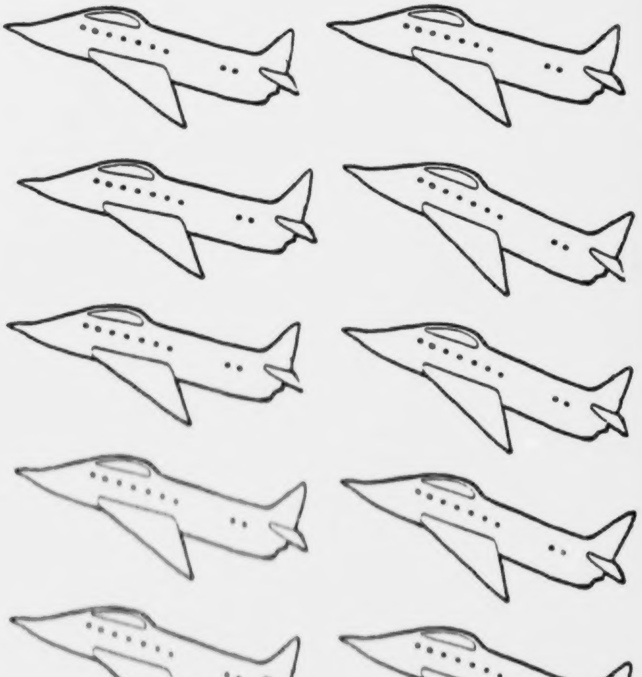

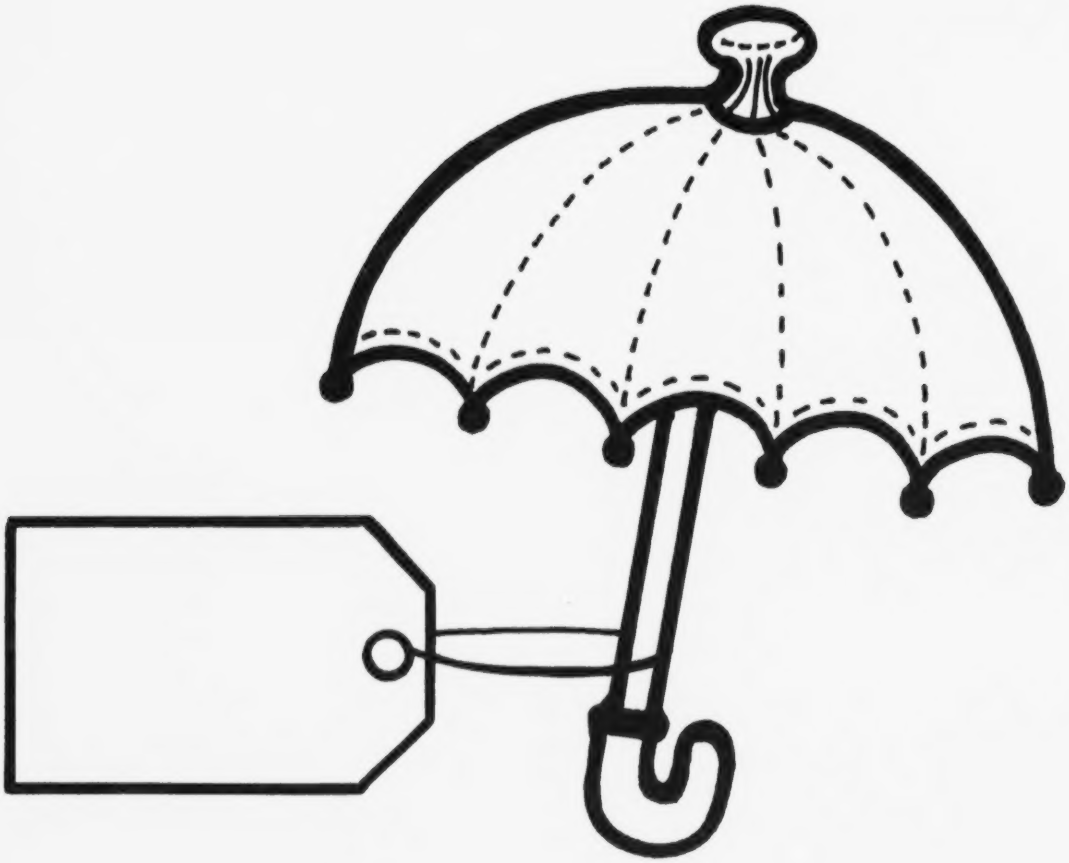

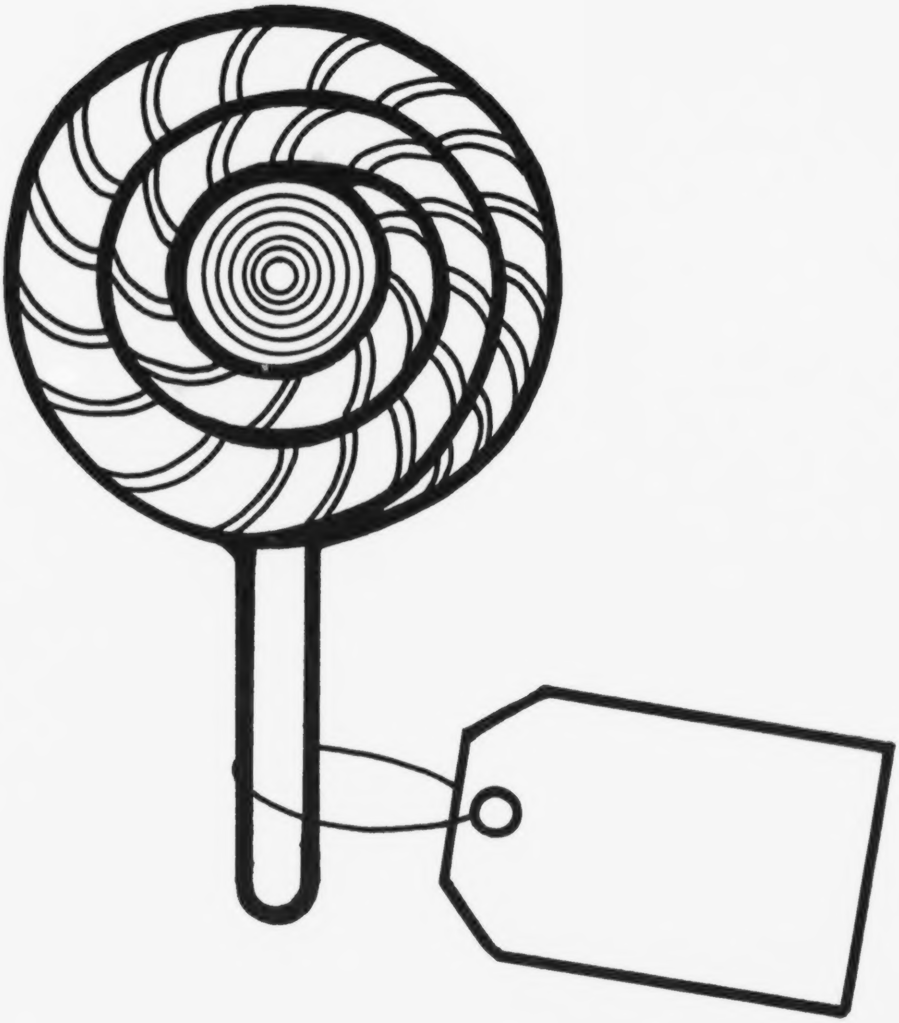

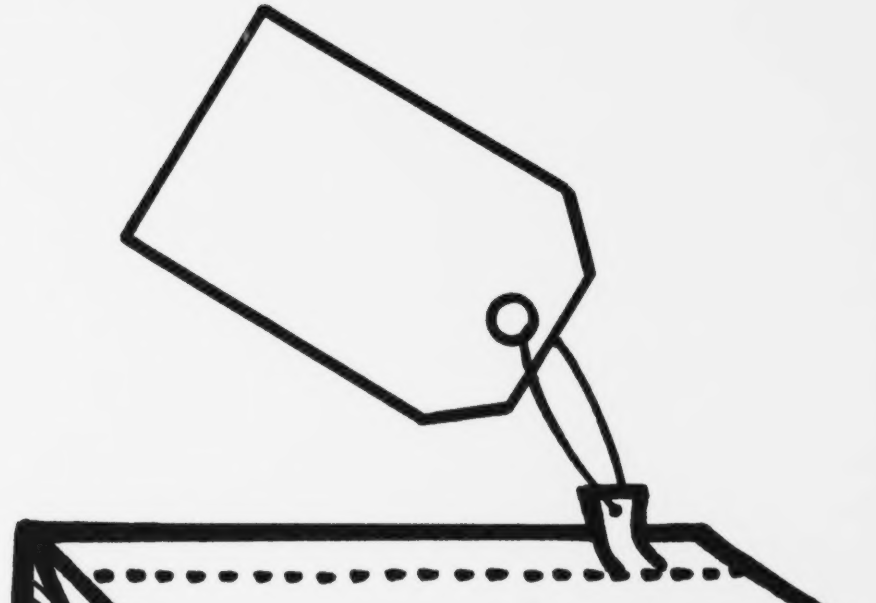
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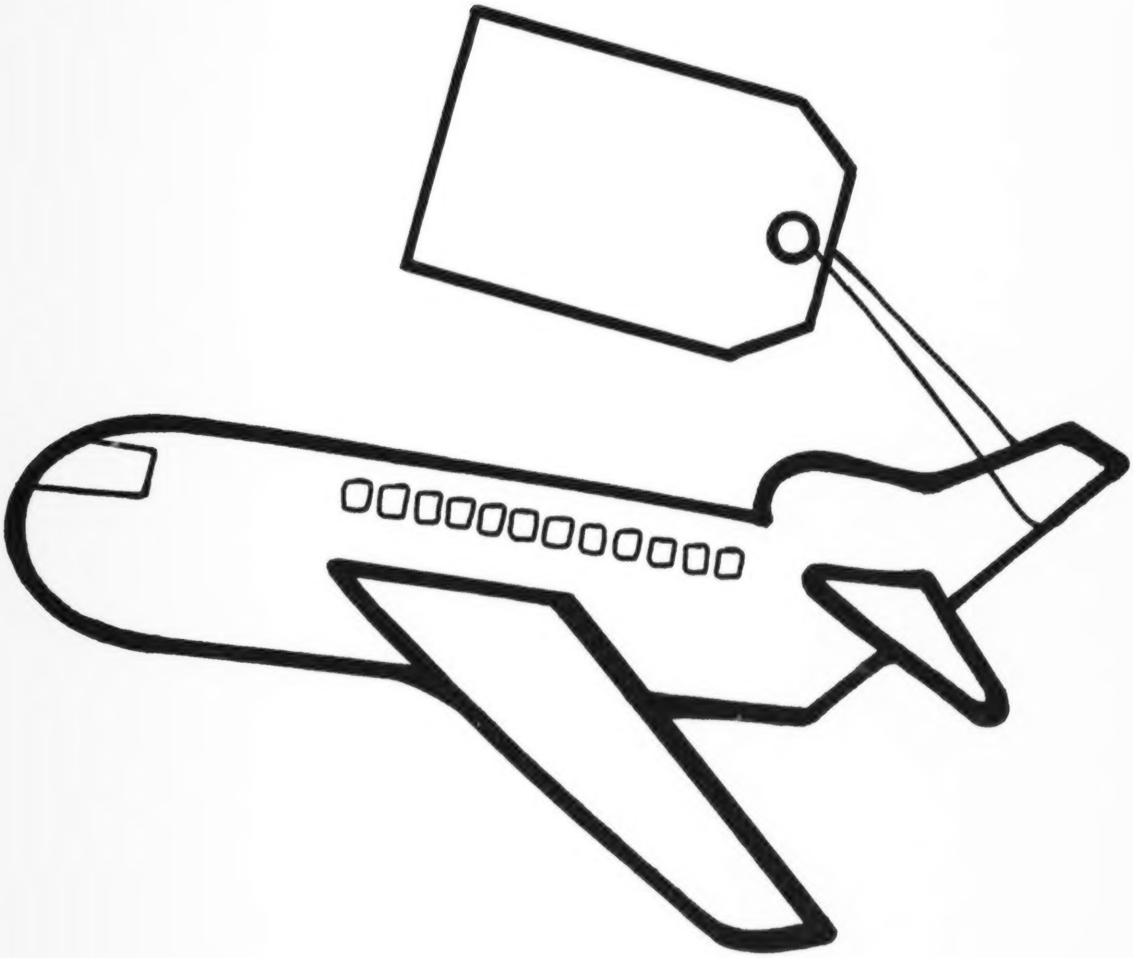

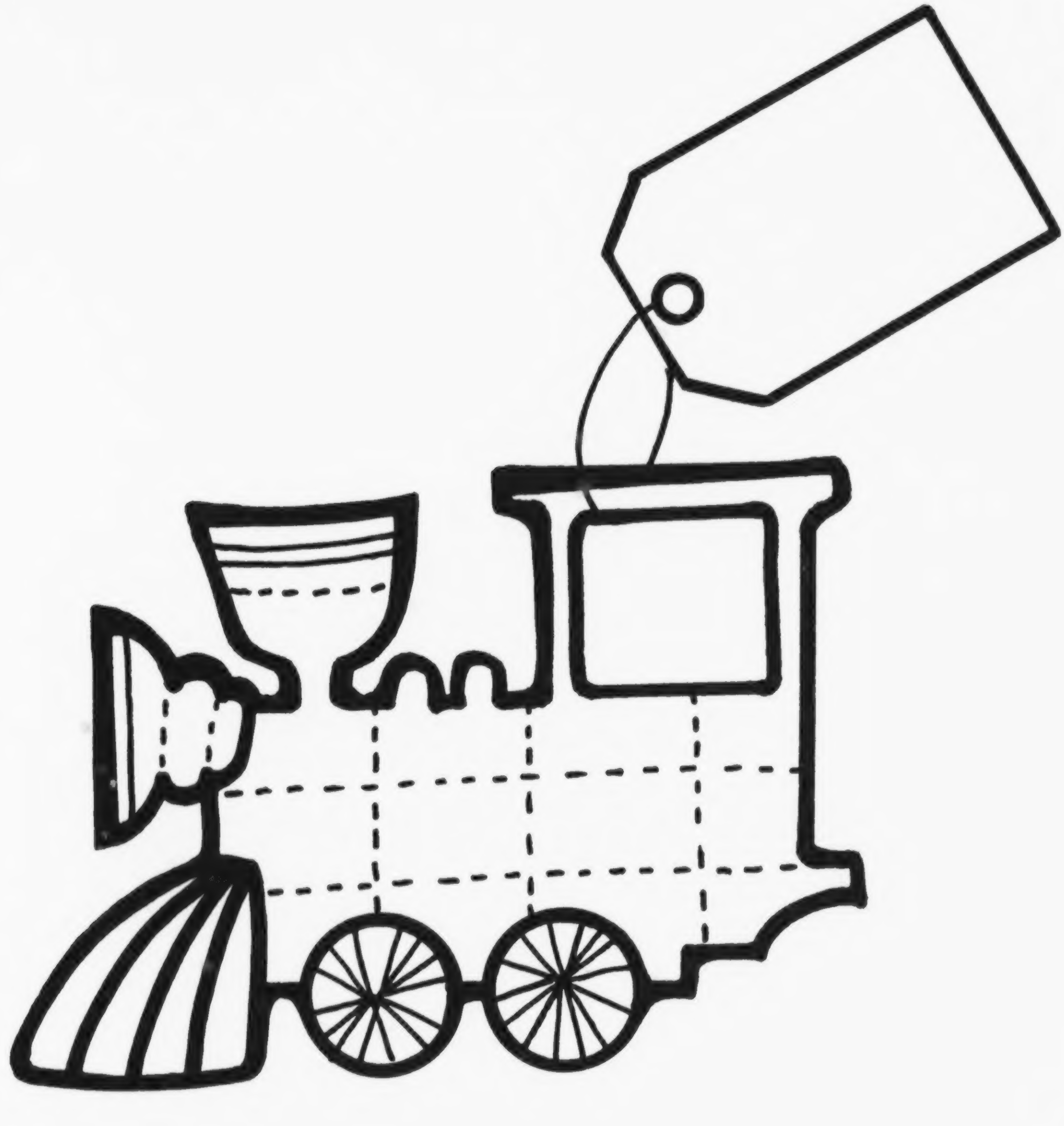

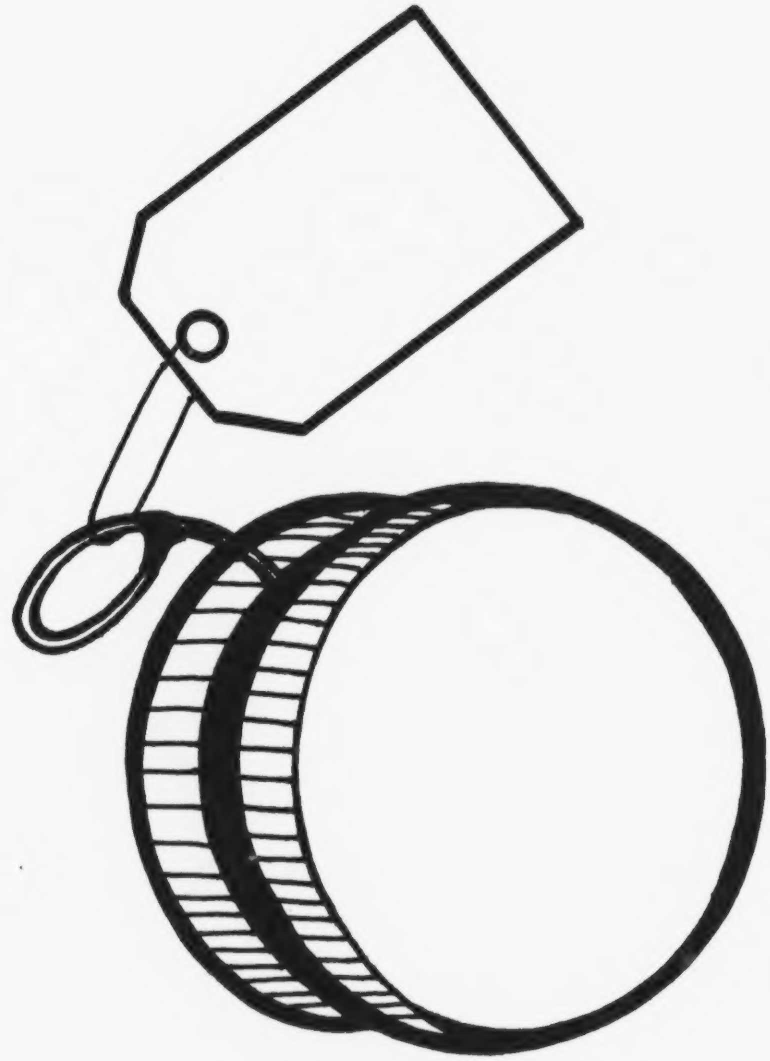

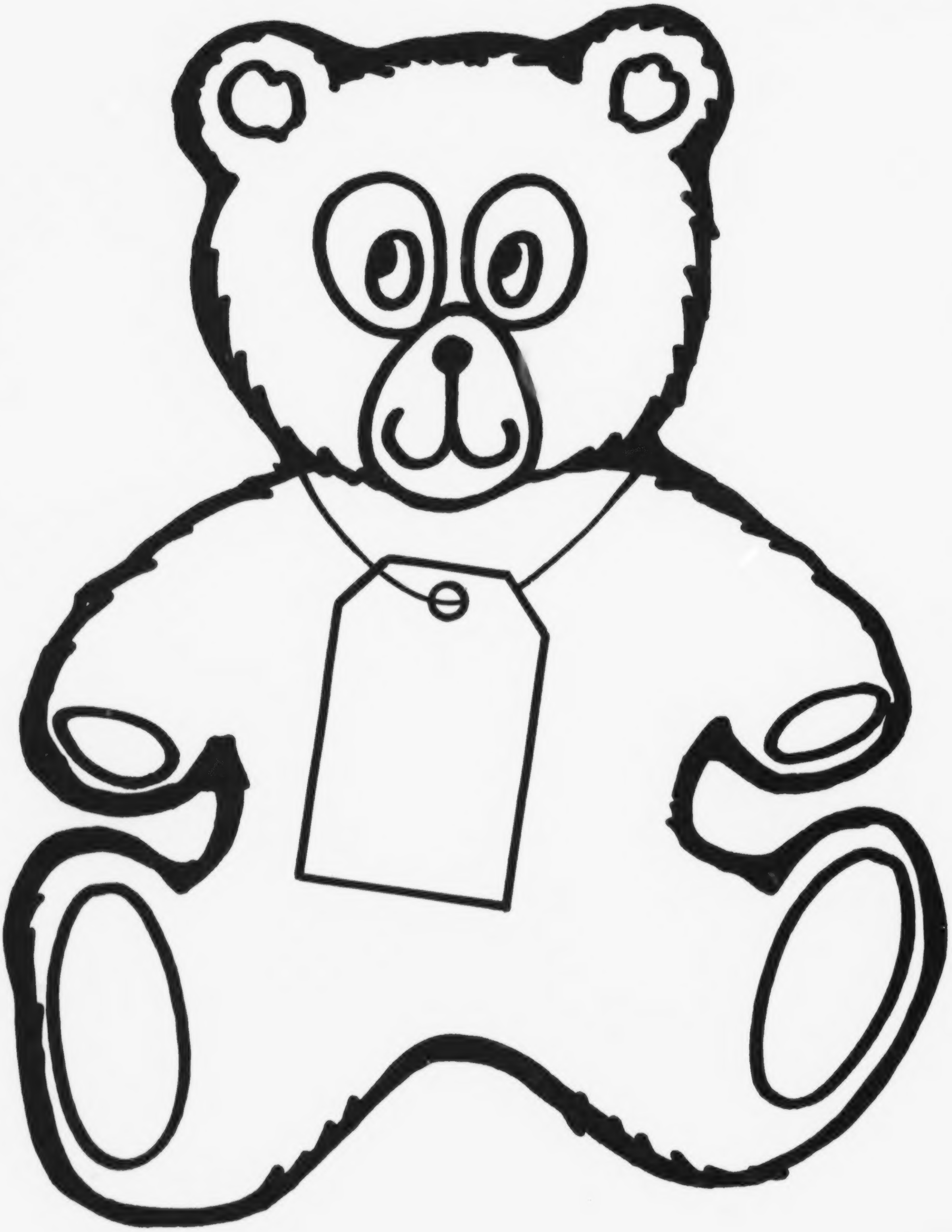

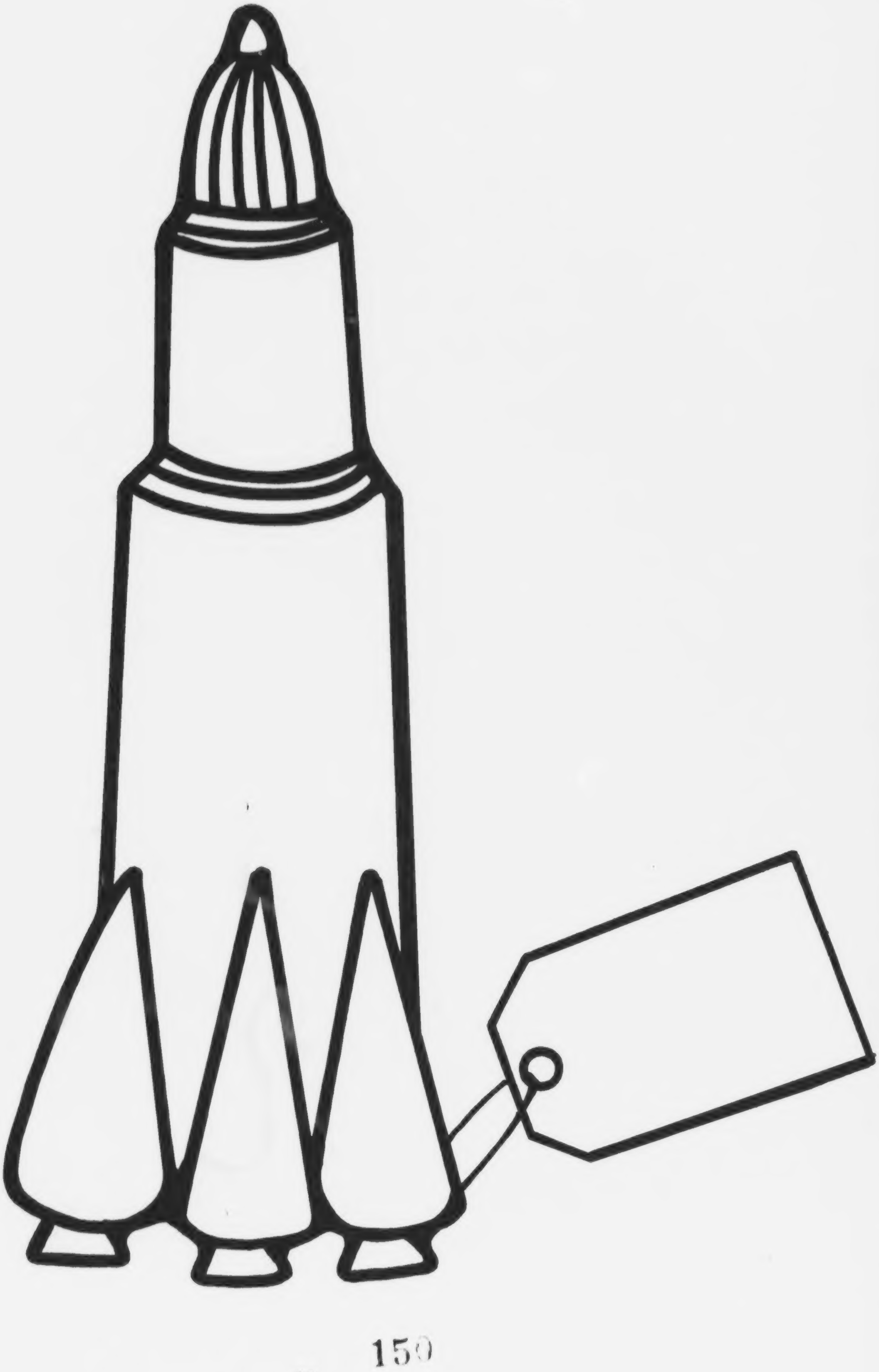

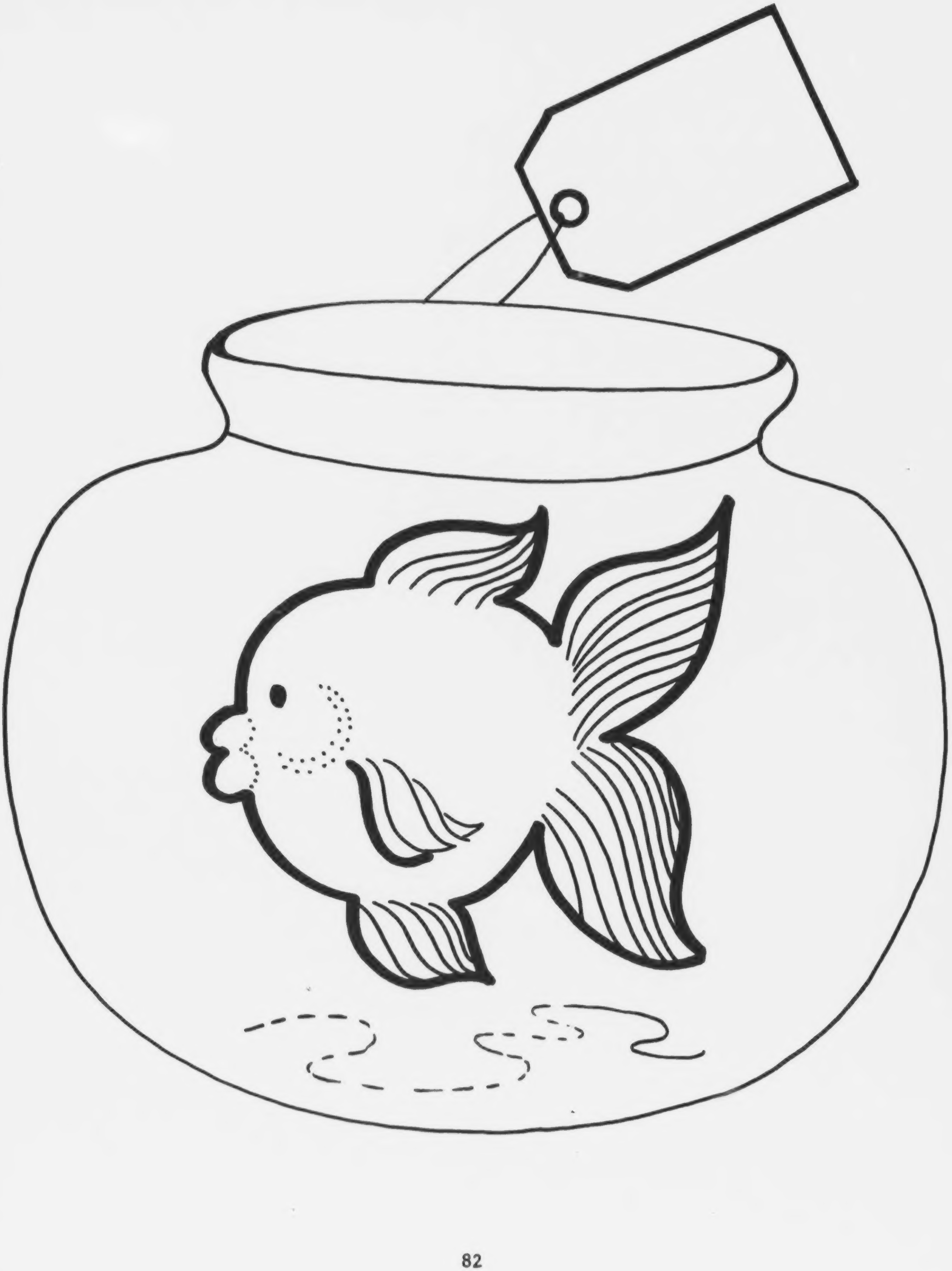

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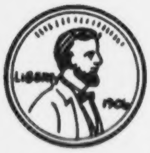

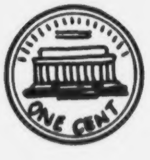

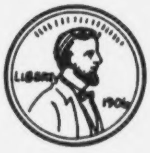

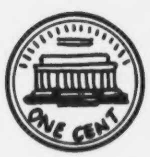

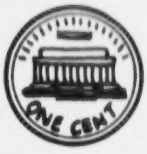

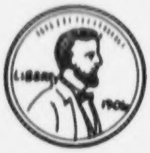

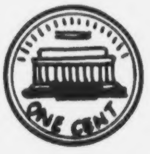

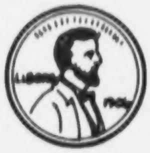

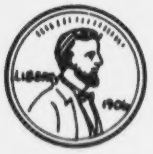

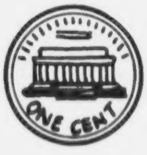

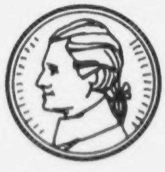

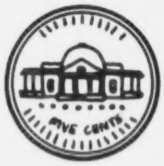

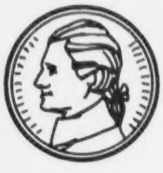

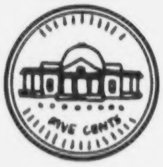

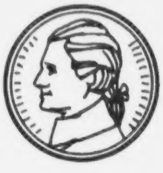

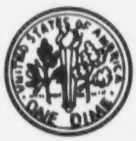
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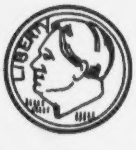

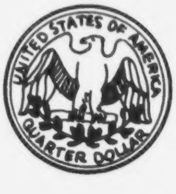
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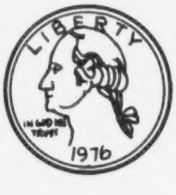
LIBERTY
IN GOD WE TRUST
1976

MONEY
UNIT 10
&
UNIT 16

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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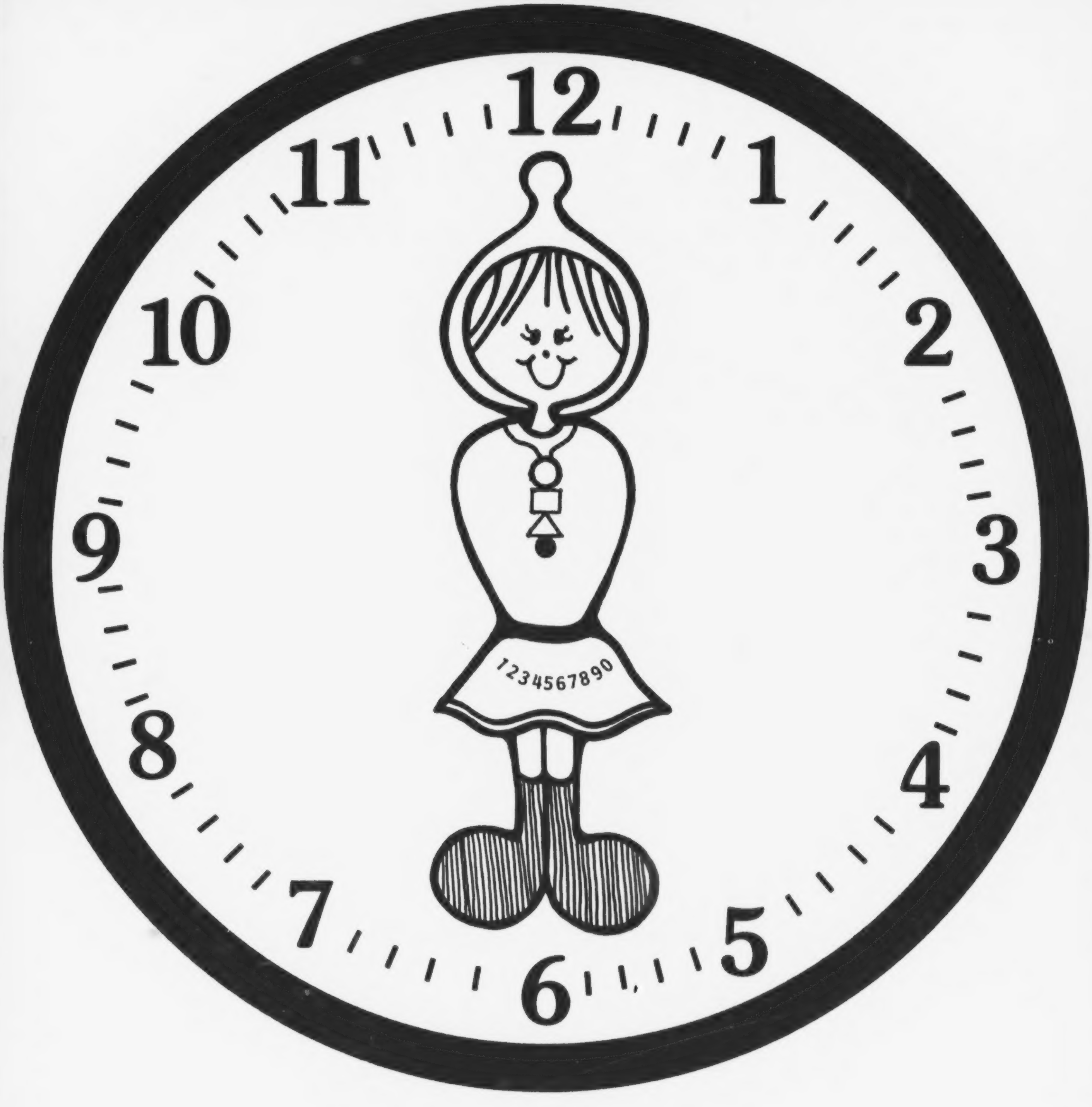
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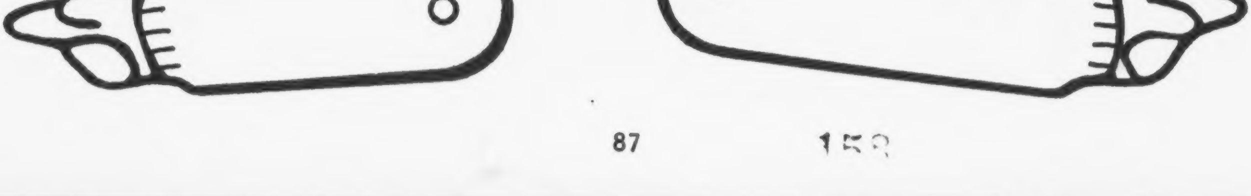

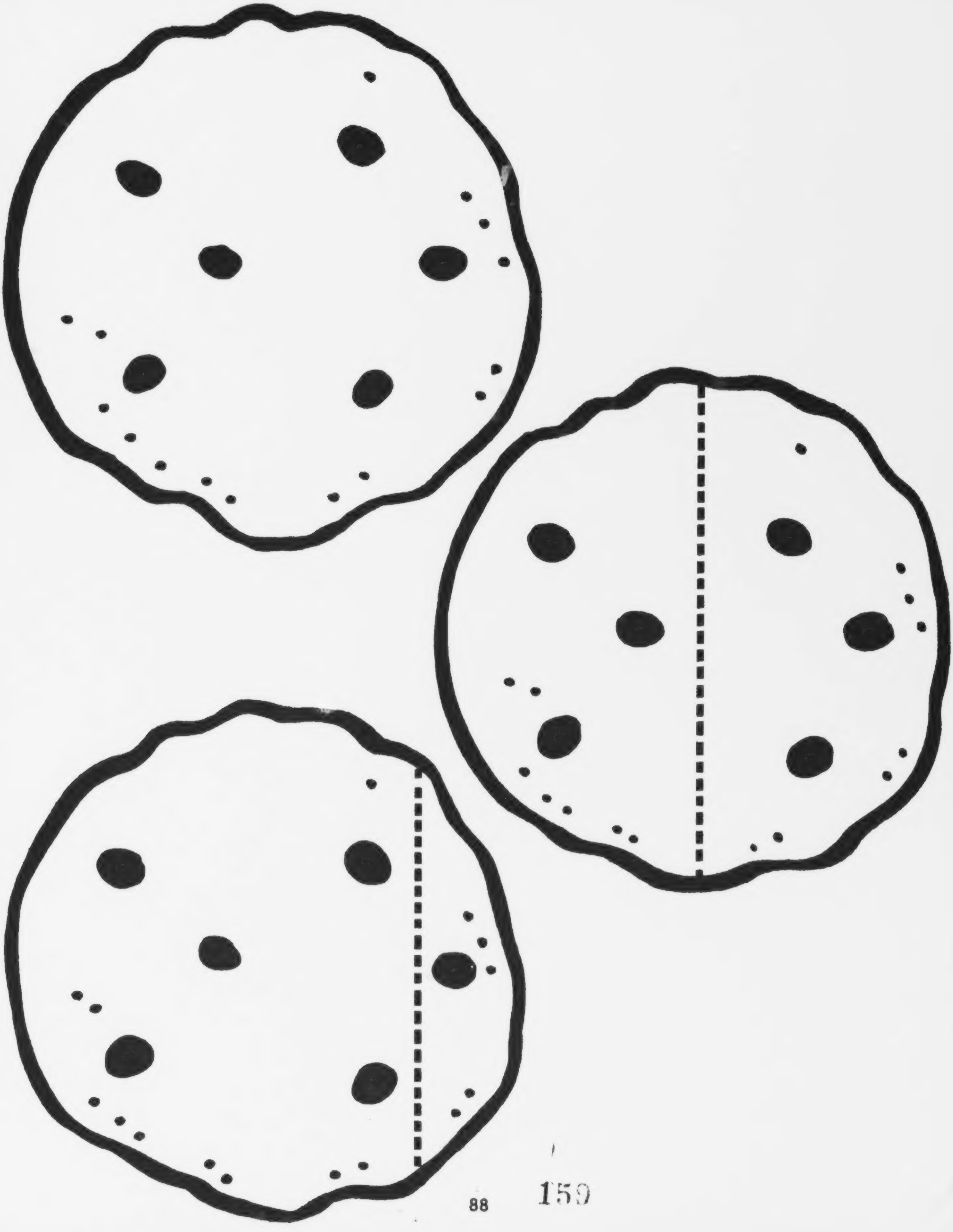

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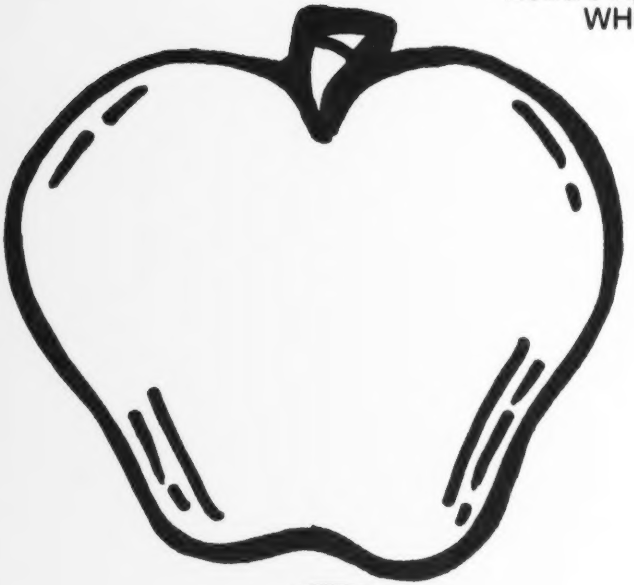
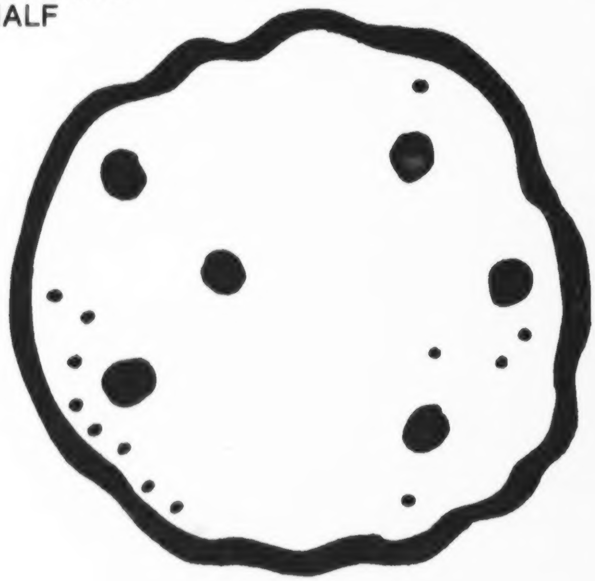
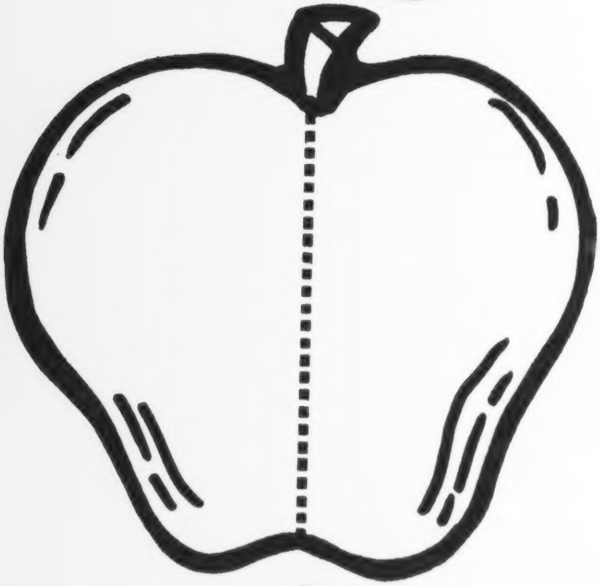
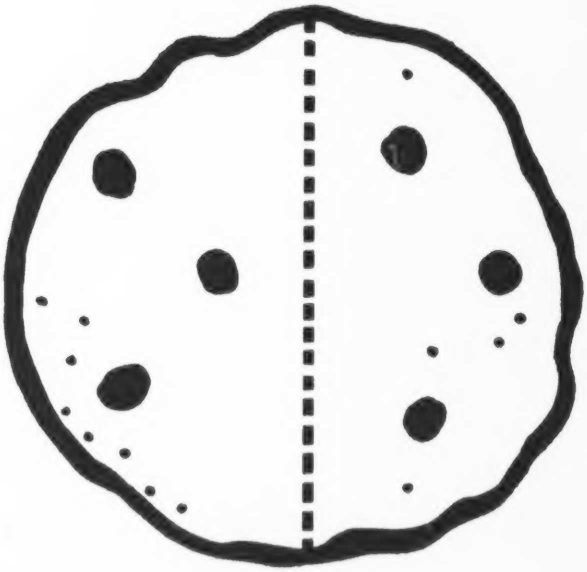
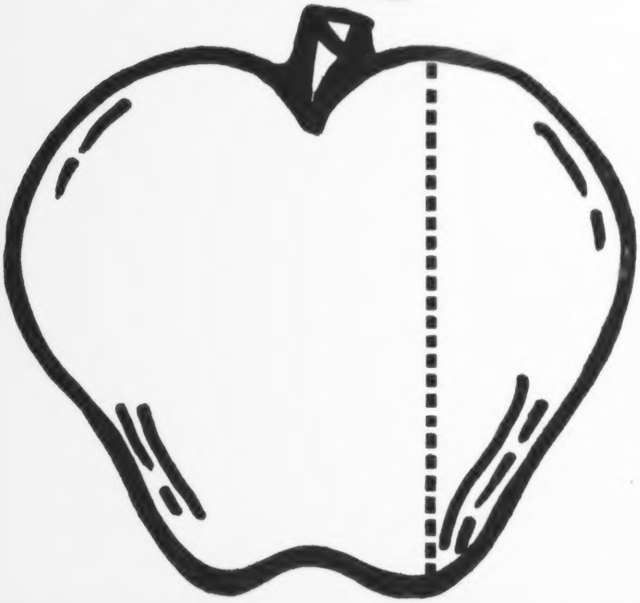
Astra's Apples and Cookies
WHOLE & HALF

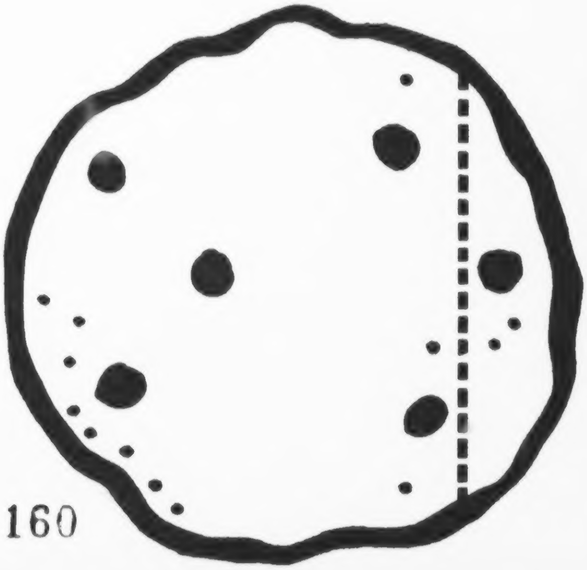












ASTRA'S COMPUTATION SYMBOL CARD

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Student
Work sheets
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ASTRA'S MAGIC MATH

Student Worksheets

Text By
Judith Brown
Jeanne Stout Burke
Gretchen Ross

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Julie Moore
Barbara Dabel

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STUDENT WORKSHEETS

ASTRA'S MAGIC MATH

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ASTRA'S MAGIC MATH is dedicated

to the Alphaphonics Beginning Reading Teachers
who have encouraged us and contributed to the
development of a companion math program
for beginning learners.

Without their original stimulus and
enthusiastic support this program would
not have been written.

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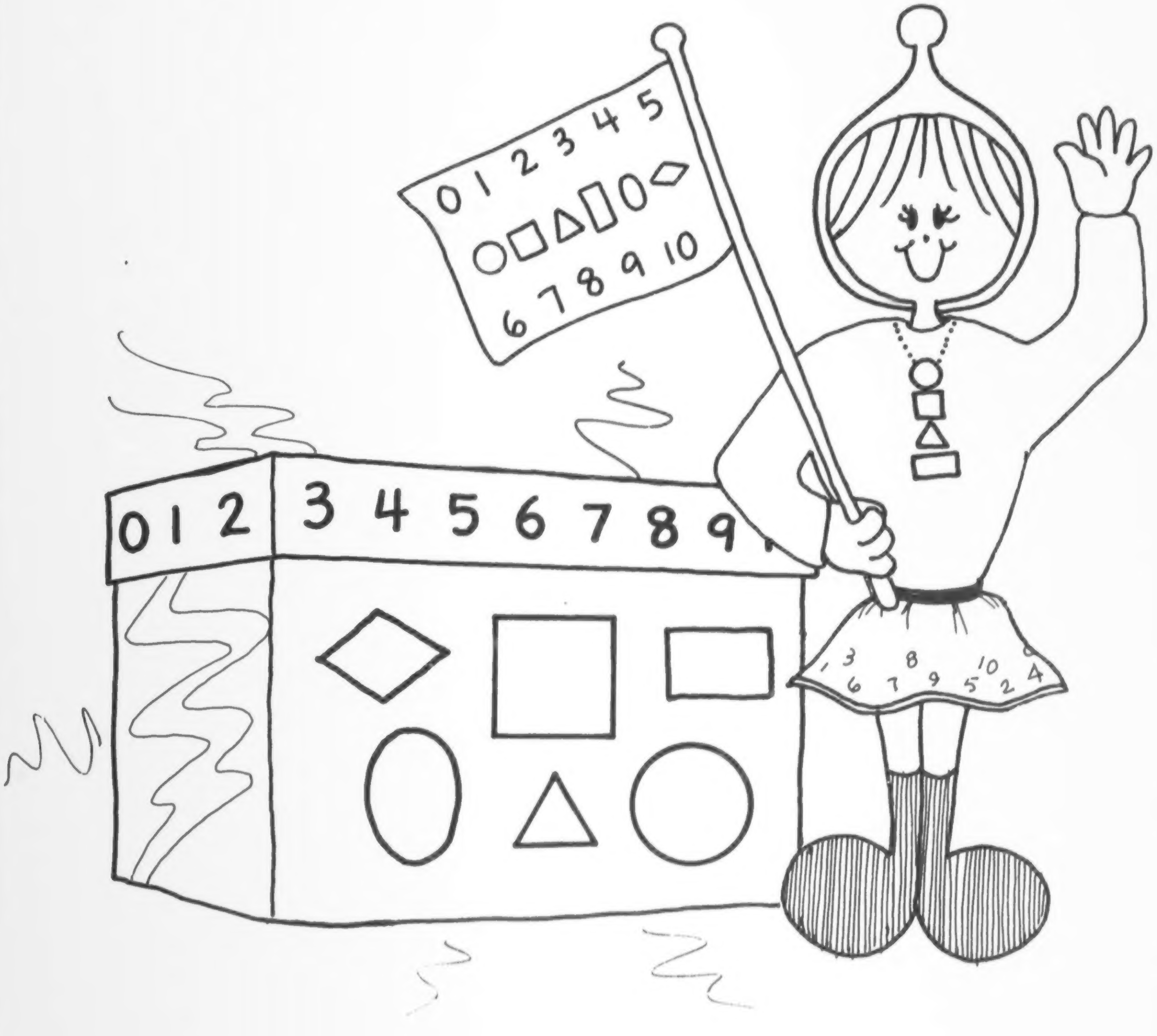
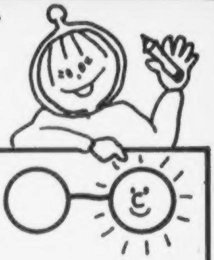
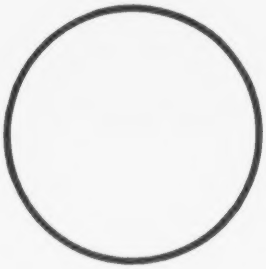


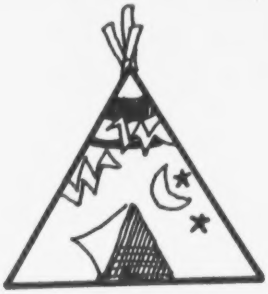
Introduction to Astra

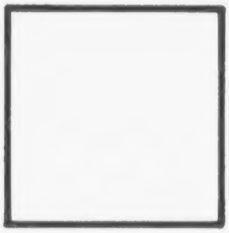
Teach Astra's Magic Box Song. Discuss Astra in detail. She is invisible, from outer space, visits classrooms daily to bring surprises about learning numbers and shapes, and other exciting things. She sees the children, but they can't see her. Discuss Astra's Magic Box and its contents. Discuss numbers on flag, have children guess what is in box. Have children color the picture.

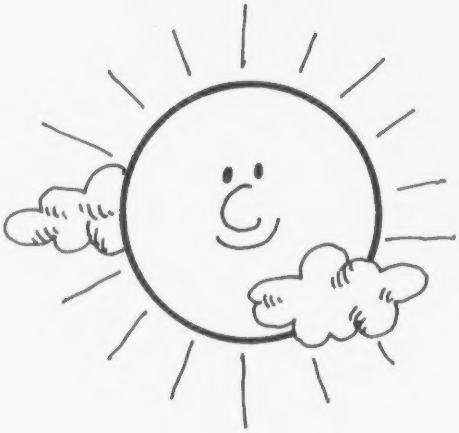
2 Name ______________________

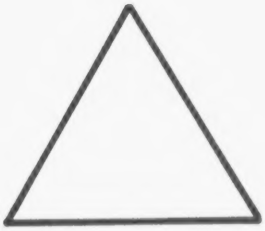


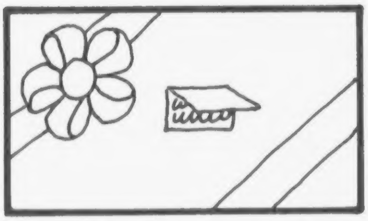


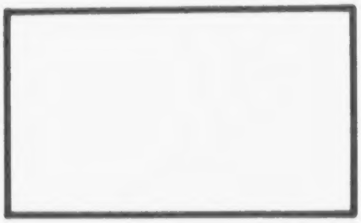


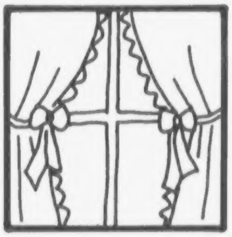








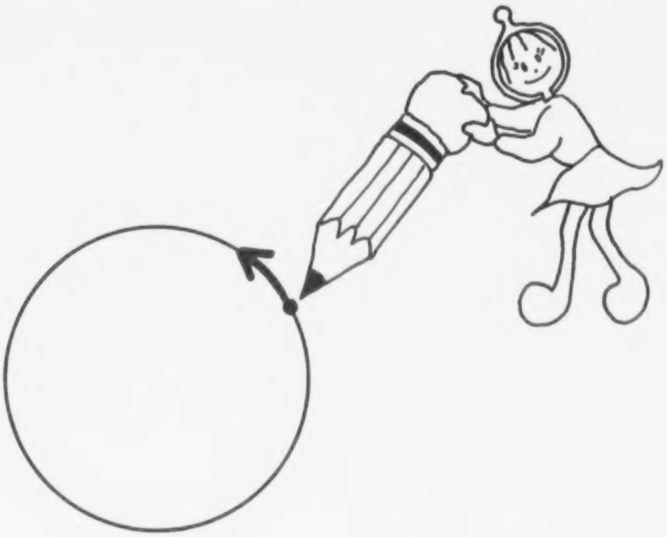


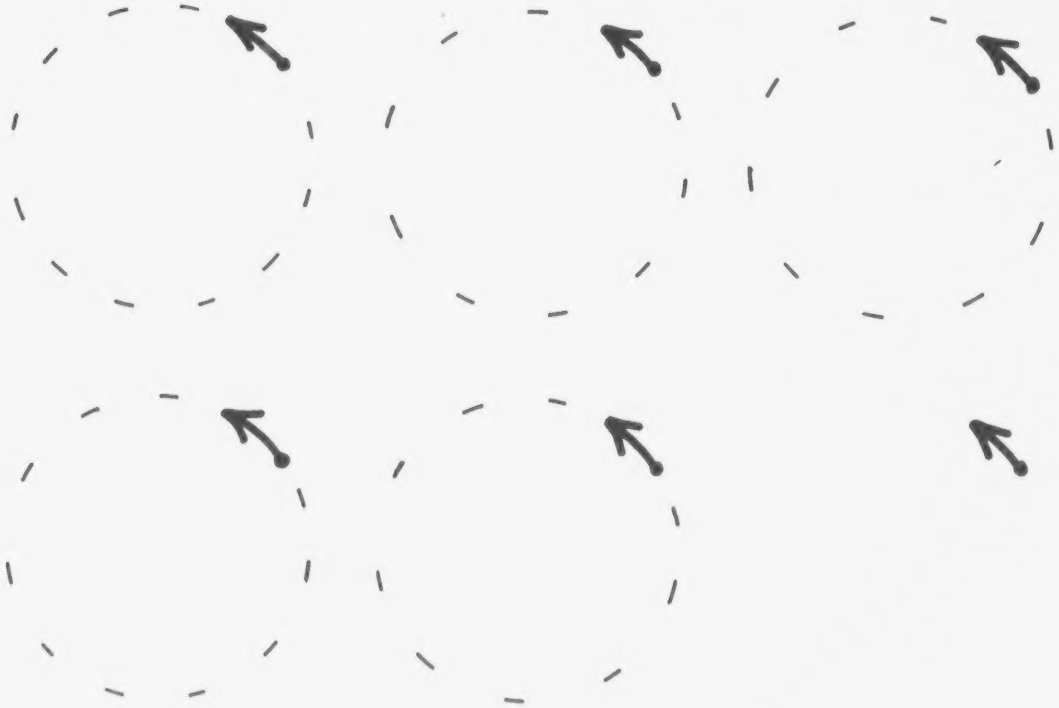


Shapes Sing Astra's Song. Name the shapes. Match the shapes. Discuss Astra's example on top of page. Discuss and correct worksheet individually with each child. Stress oral language - names of shapes. Use appropriate Unit 1 activities/songs.

Name

3

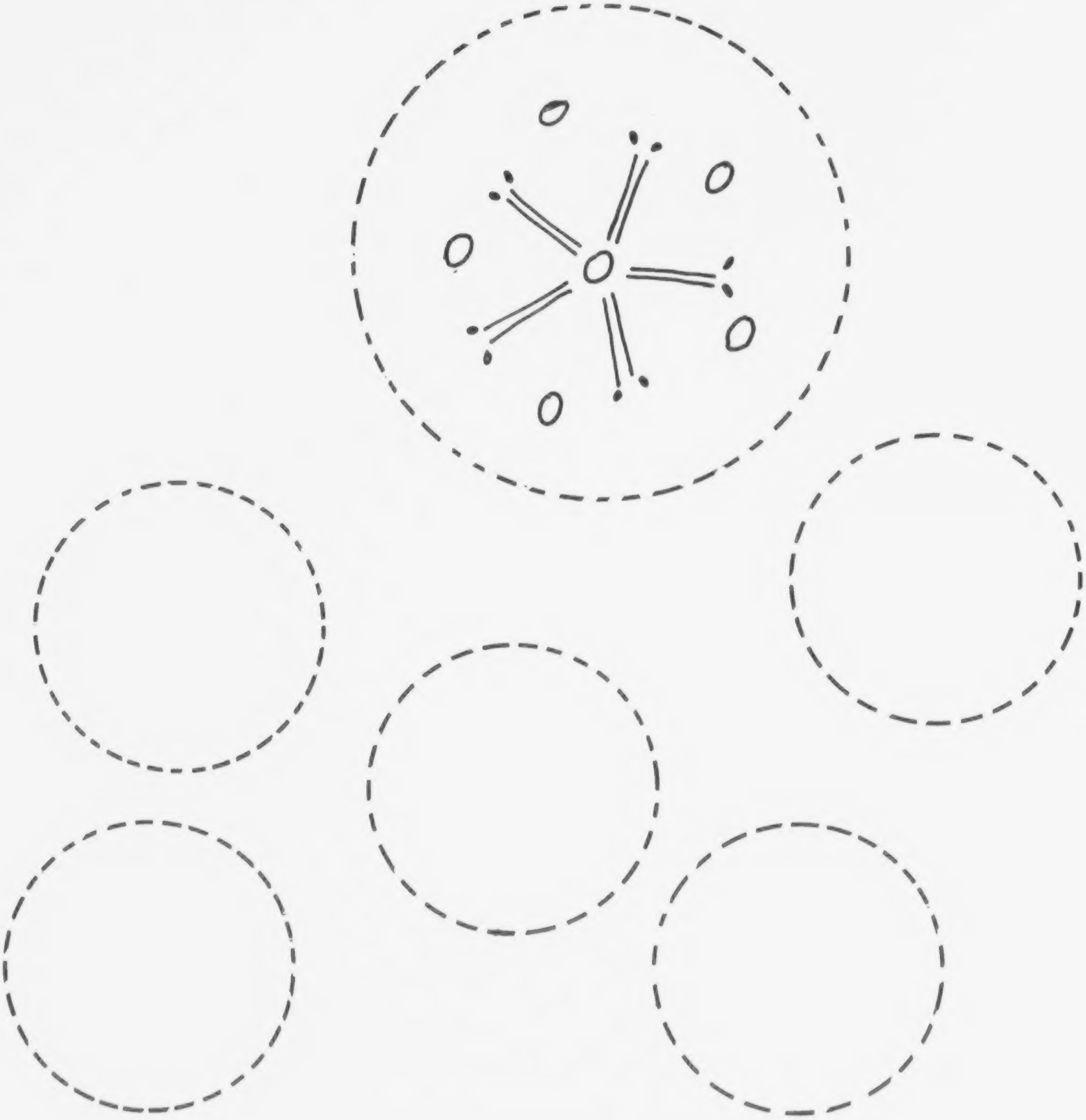




Circles

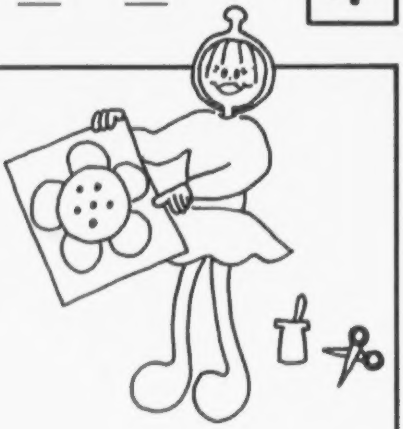
Sing Astra's Song. Discuss Astra. Kinesthetic. Trace all circles. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

4A Name ______________________



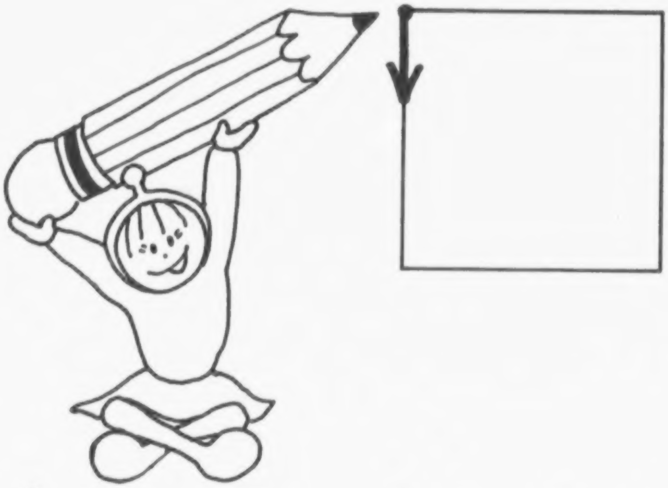
Circles Sing Astra's Song. Discuss Astra's flower. Cut and paste on paper to make a flower blossom . See Astra's sample. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

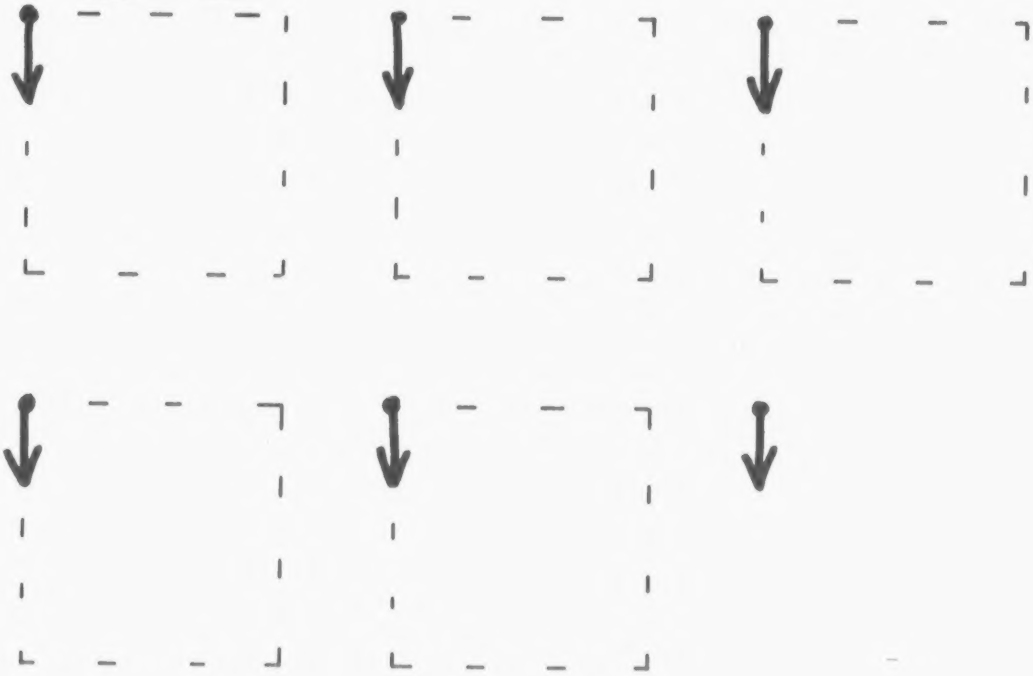
Name _______________



Circles Sing Astra's Song. Discuss Astra's flower. Cut and paste on paper to make a flower blossom . See Astra's sample. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

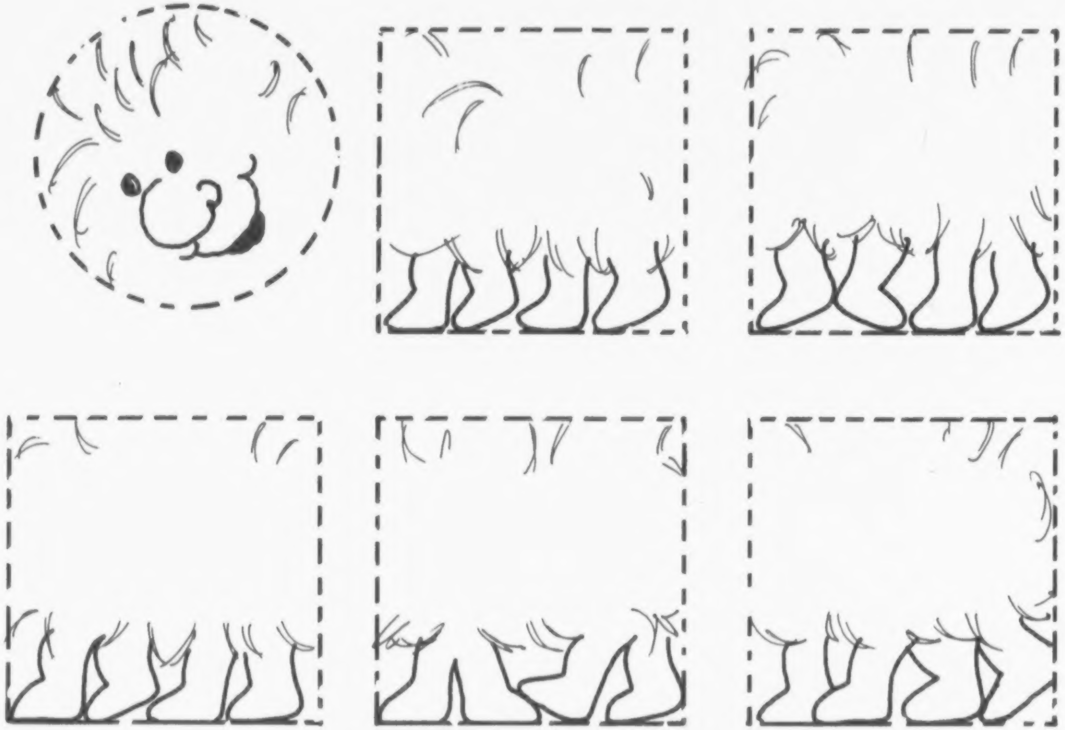
5 Name ______________





Squares Sing Astra's Song. Discuss Astra's square. Kinesthetic. Trace all squares. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

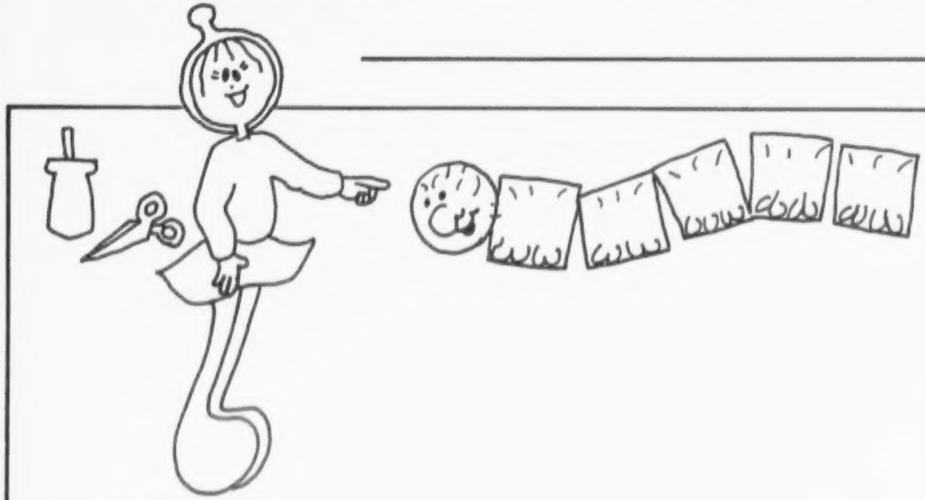
6A Name



Squares Sing Astra's Song. Discuss Astra's caterpillar. Cut and paste to make caterpillar. See Astra's sample. Draw face, feet. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

Name _ _ _ _ _ _ _ _ _ _ _

6

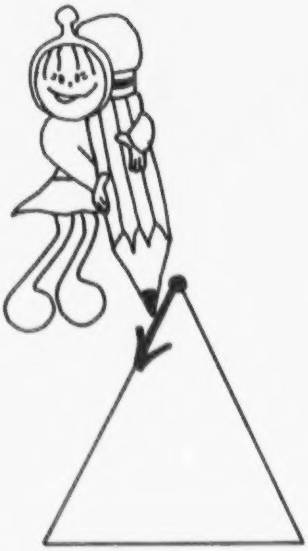


Squares

Sing Astra's Song. Discuss Astra's caterpillar. Cut and paste to make caterpillar. See Astra's sample. Draw face, feet. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

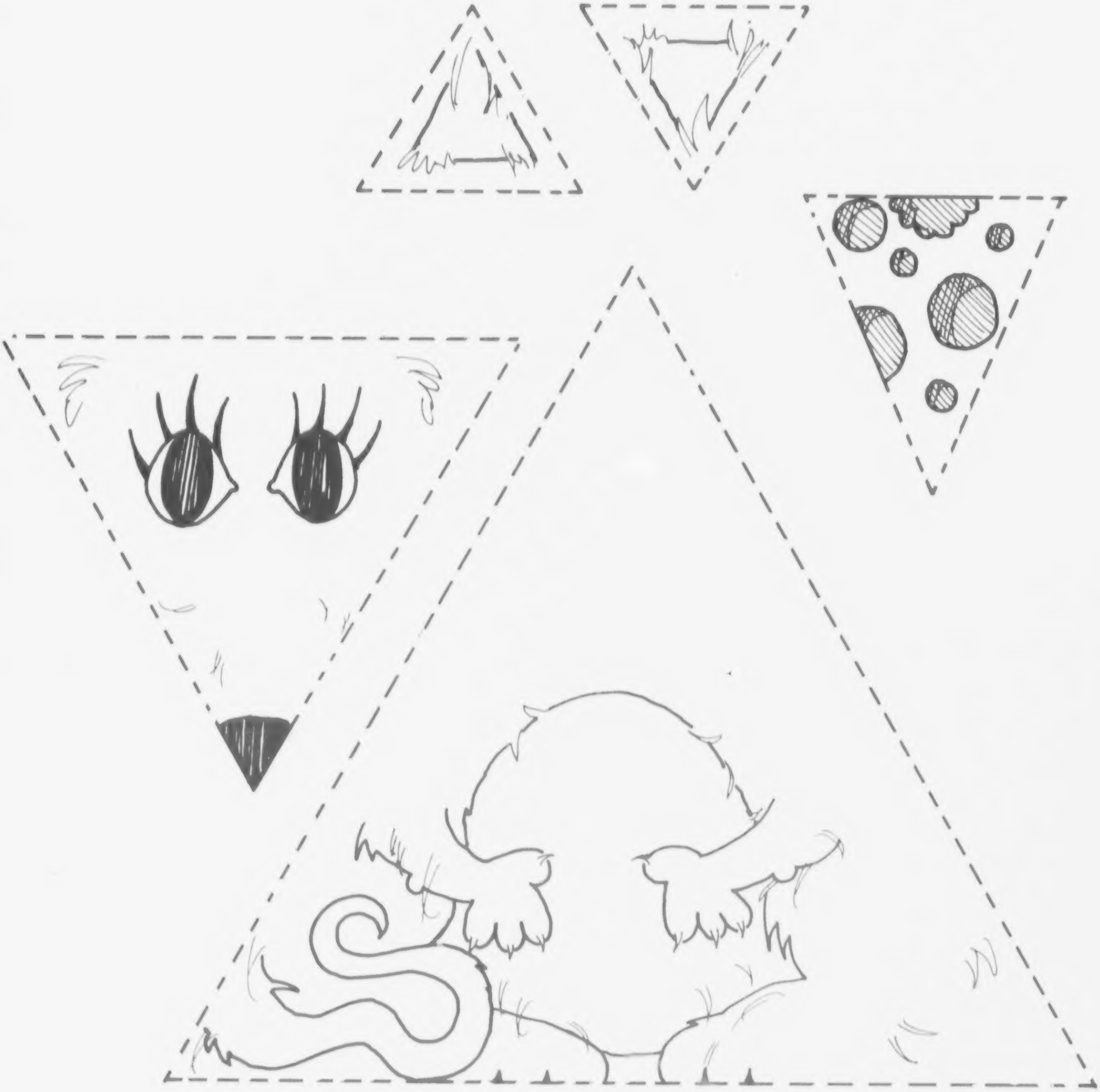
Name ________________

7

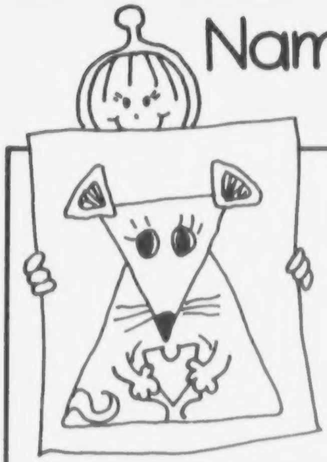


Triangles Sing Astra's Song. Discuss Astra's triangle. Kinesthetic. Trace all triangles. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

8A Name ______________________



Triangles Sing Astra's Song. Discuss Astra's mouse. Cut and paste on paper to make mouse and cheese. See Astra's sample. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

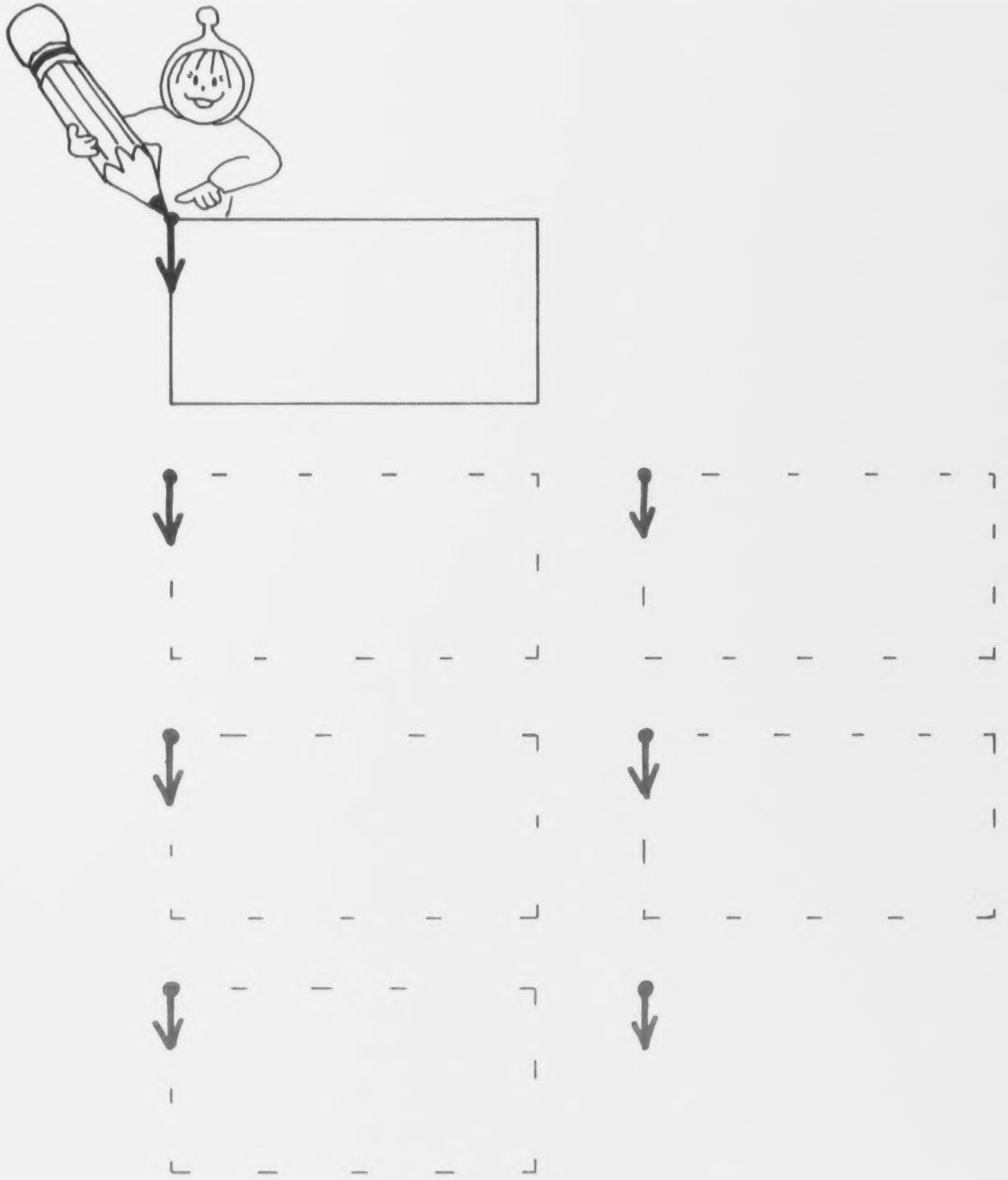


Name _______________

8

Triangles Sing Astra's Song. Discuss Astra's mouse. Cut and paste on paper to make mouse and cheese. See Astra's sample. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

9 Name ______________________

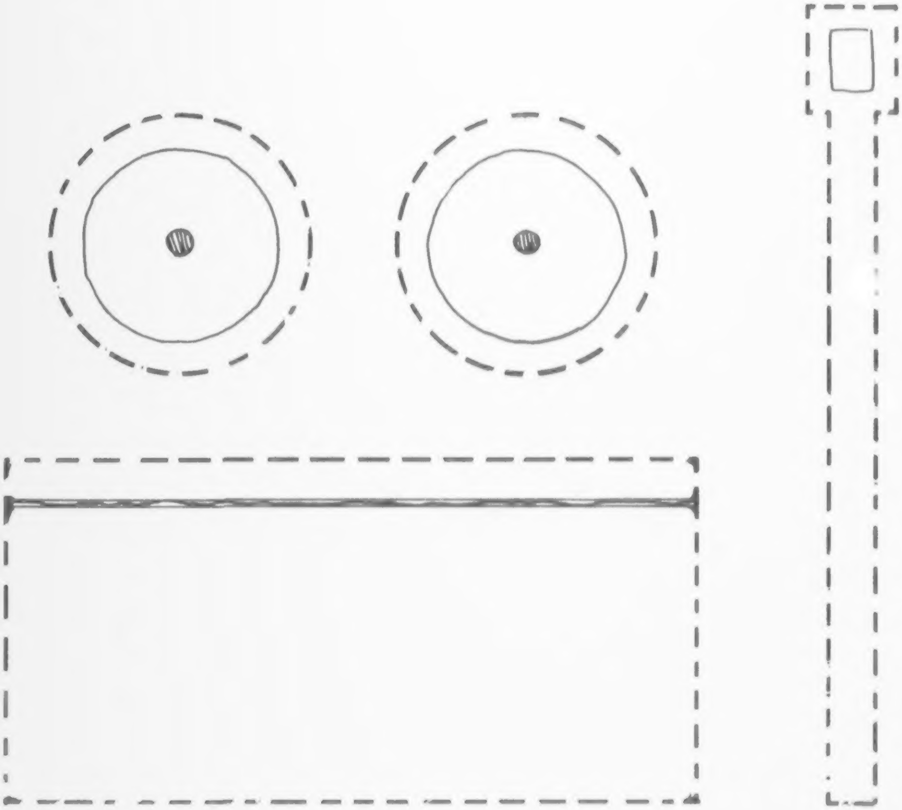


Rectangles

Sing Astra's Song. Discuss Astra's rectangle. Kinesthetic. Trace all rectangles. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

Name _______________

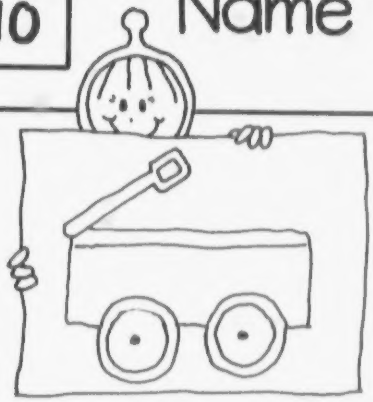
10A



Rectangle

Sing Astra's Song. Discuss Astra's wagon. Review circle. Cut and paste on paper to make a wagon. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

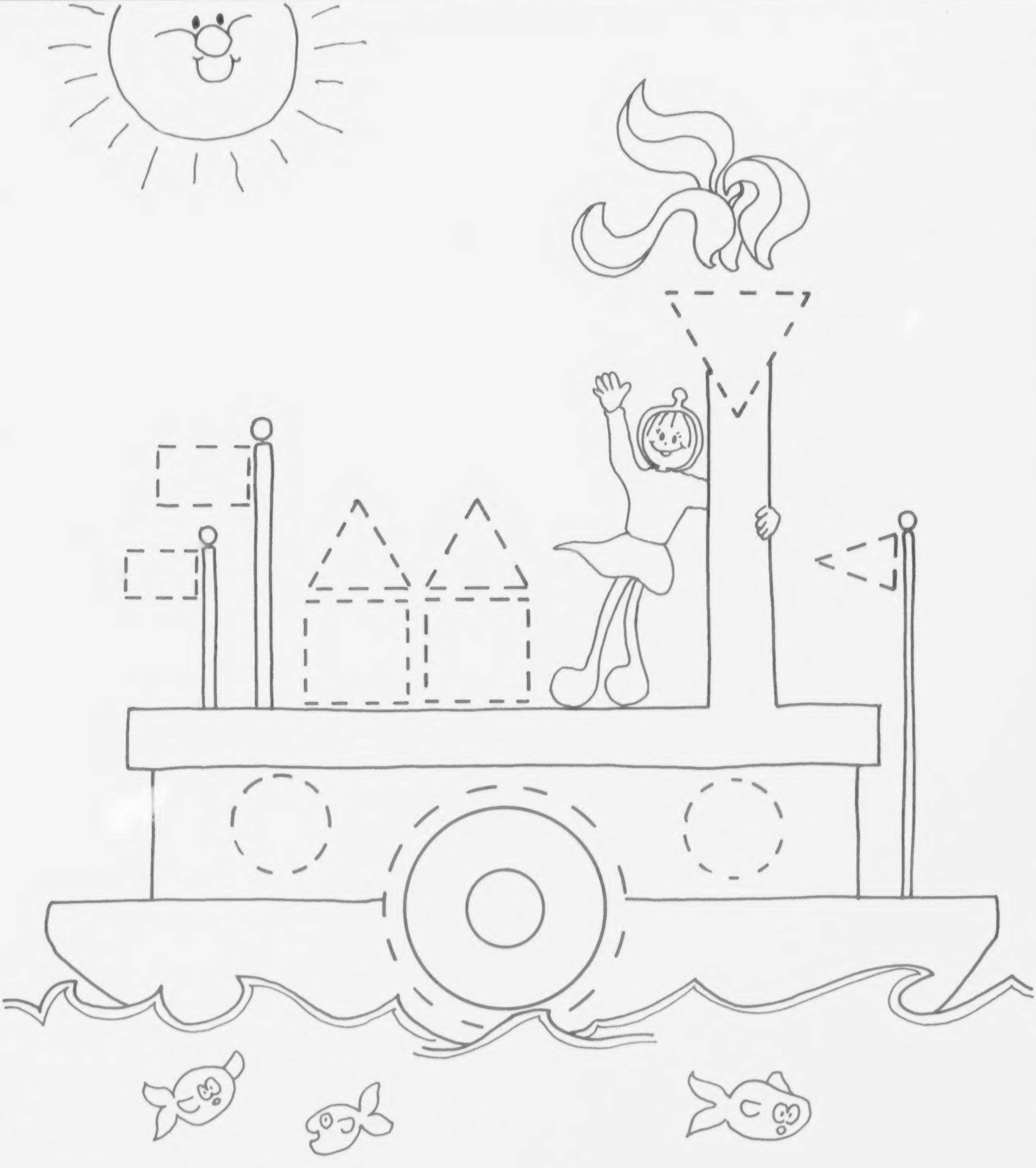
10 Name



Rectangle Sing Astra's Song. Discuss Astra's wagon. Review circle. Cut and paste on paper to make a wagon. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

Name ____________________

11

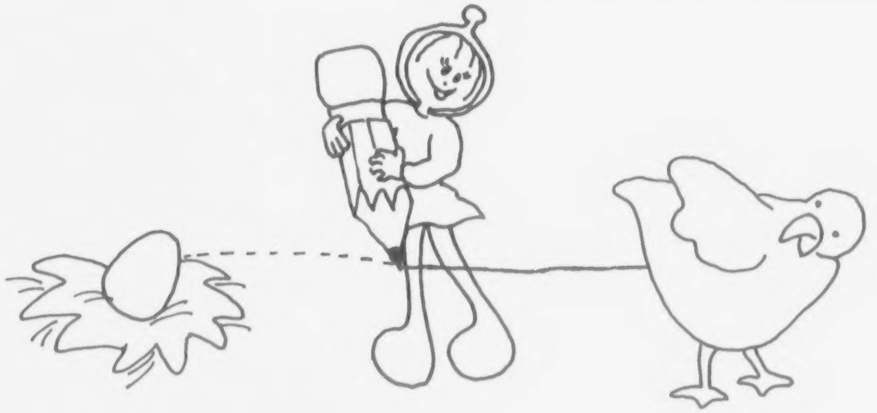


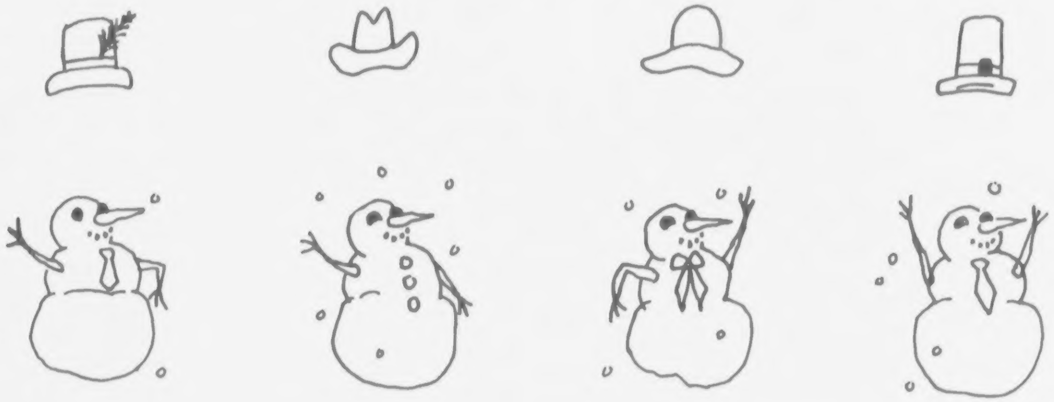
Shape Review

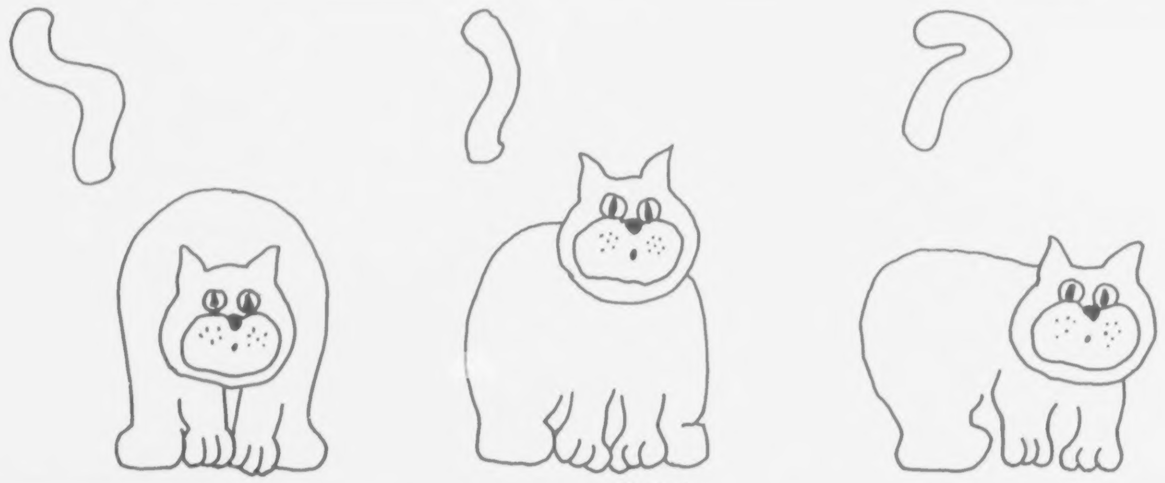
Name and trace shapes on boat using various colors. Discuss and correct worksheet individually with each child. Stress oral language. Use appropriate Unit 1 activities/songs.

12

Name ______________________







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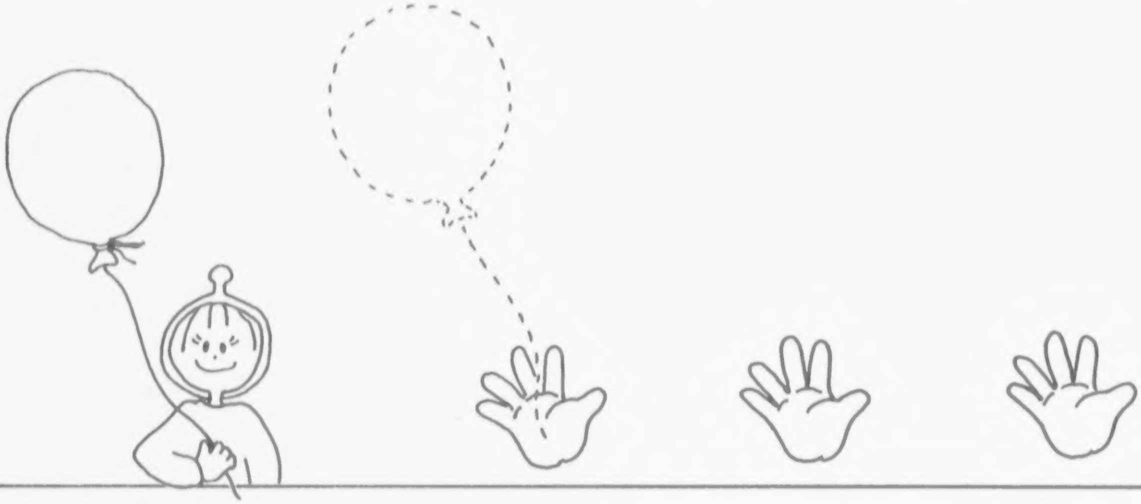
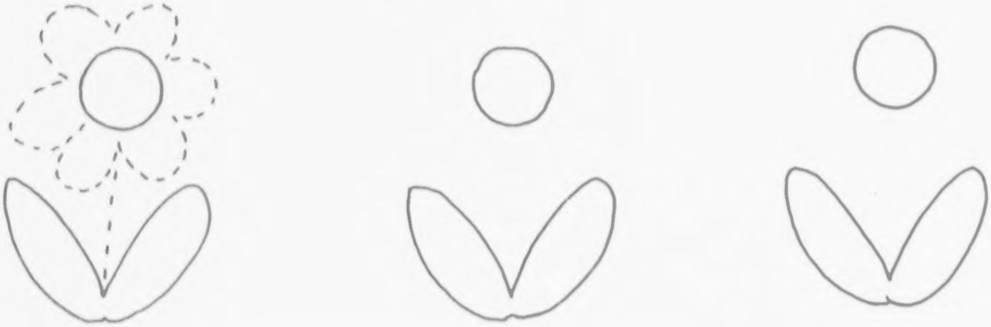
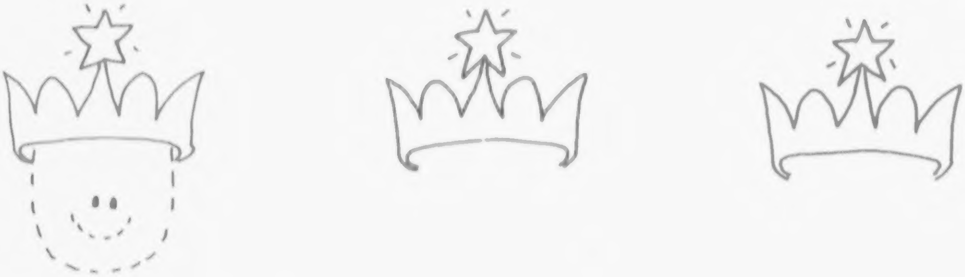
One-to-one matching Sing Astra's Song. Discuss Astra. Match hats to snowmen and tails to cats. Stress the number of objects. Use appropriate Unit 2 activities/songs.

Name ______________________

13

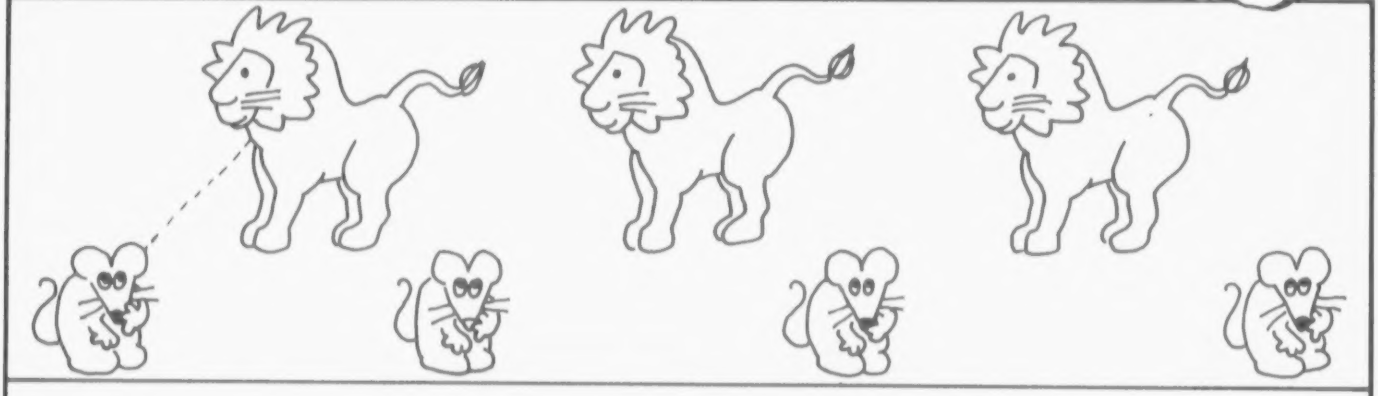


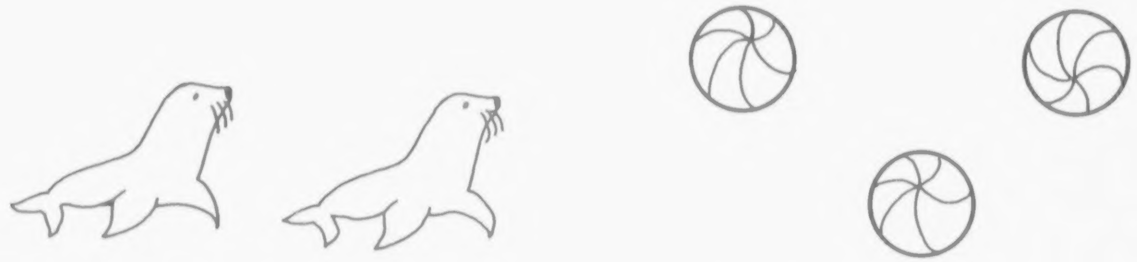


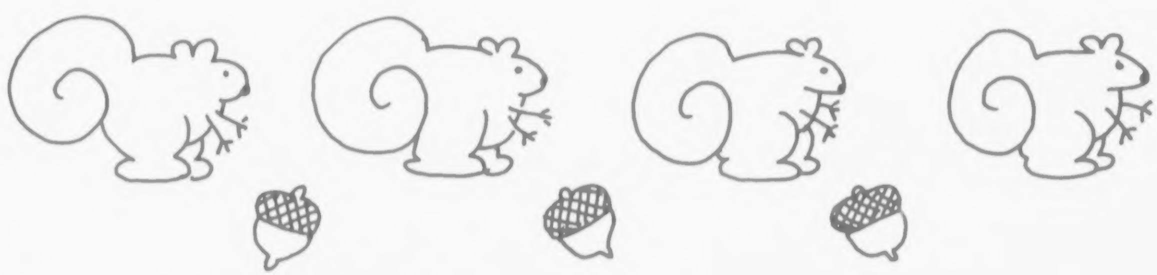


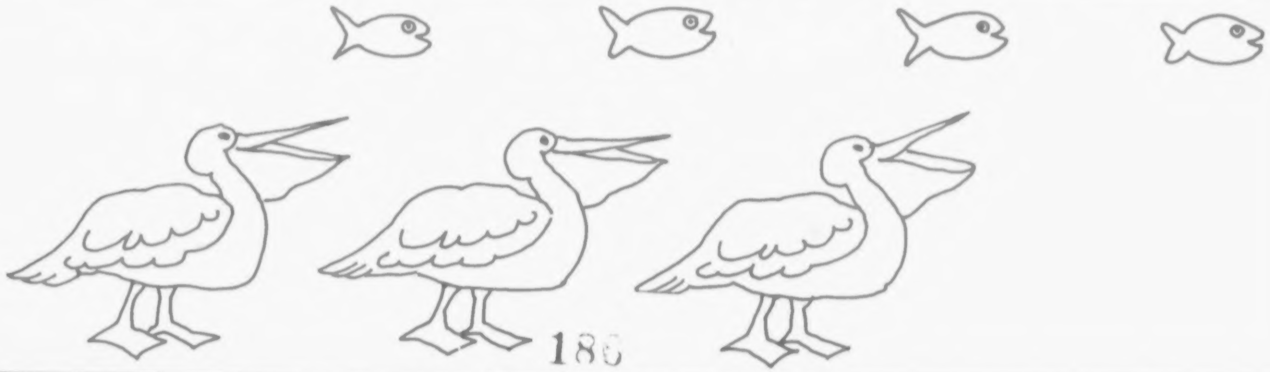
One-to-one matching Sing Astra's Song. Discuss Astra. Children trace and draw figures to make sets the same and stress one-to-one matching. Use appropriate Unit 2 activities/songs.

14 **Name**





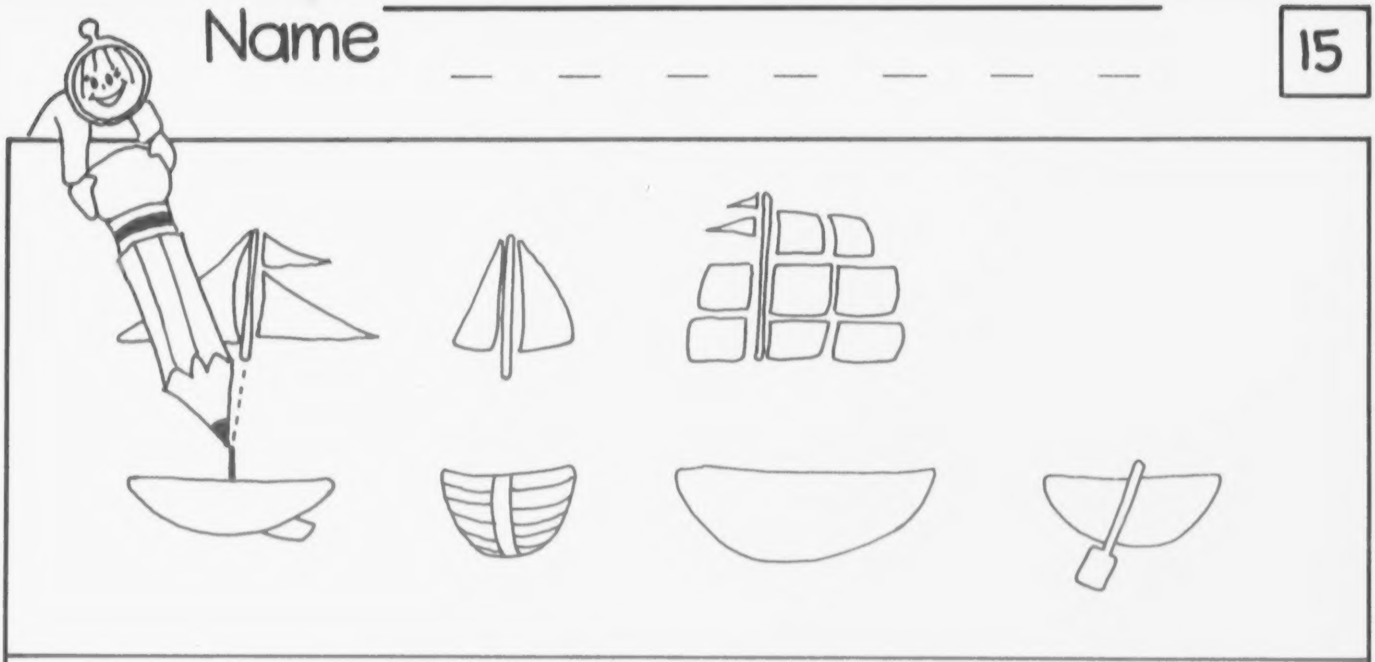


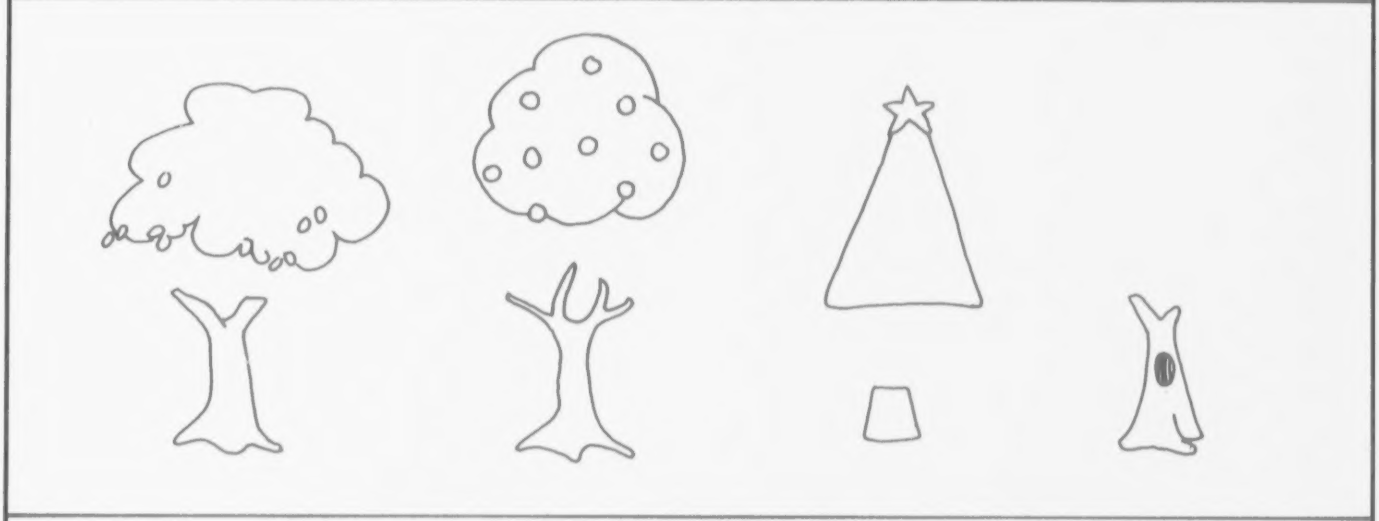


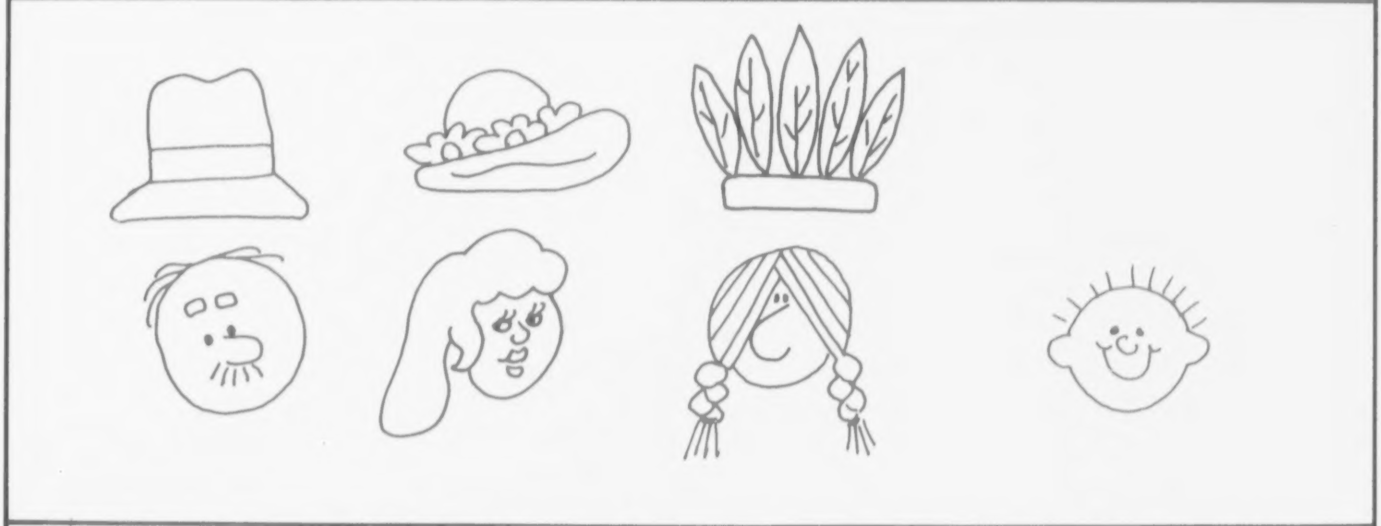
One-to-one matching Sing Astra's Song. Discuss Astra. Stress the word more while doing one-to-one matching of uneven sets. Cross out "extra" in set with more. Use appropriate Unit 2 activities/songs.

Name ______________________

15



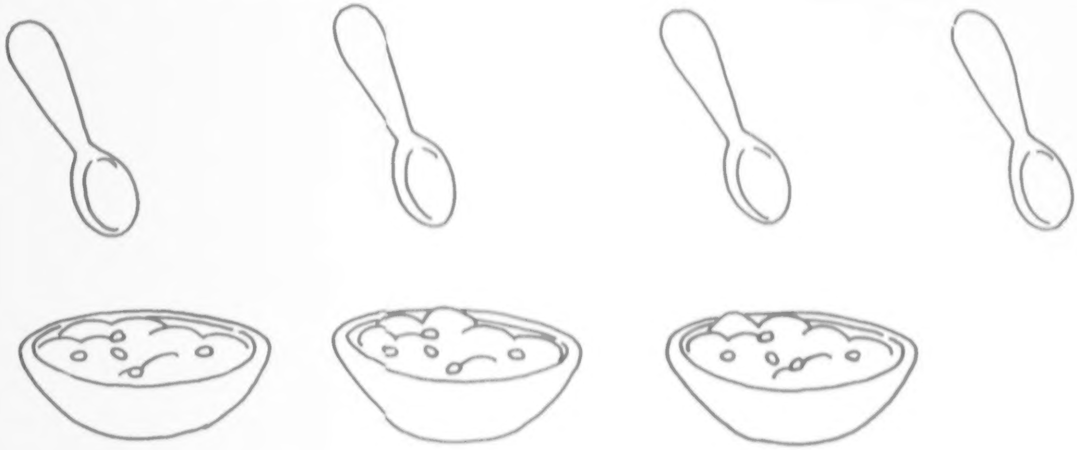


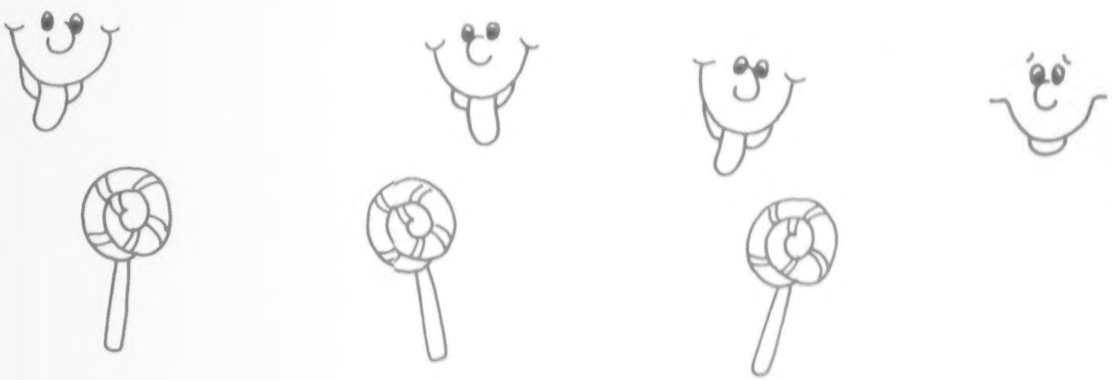


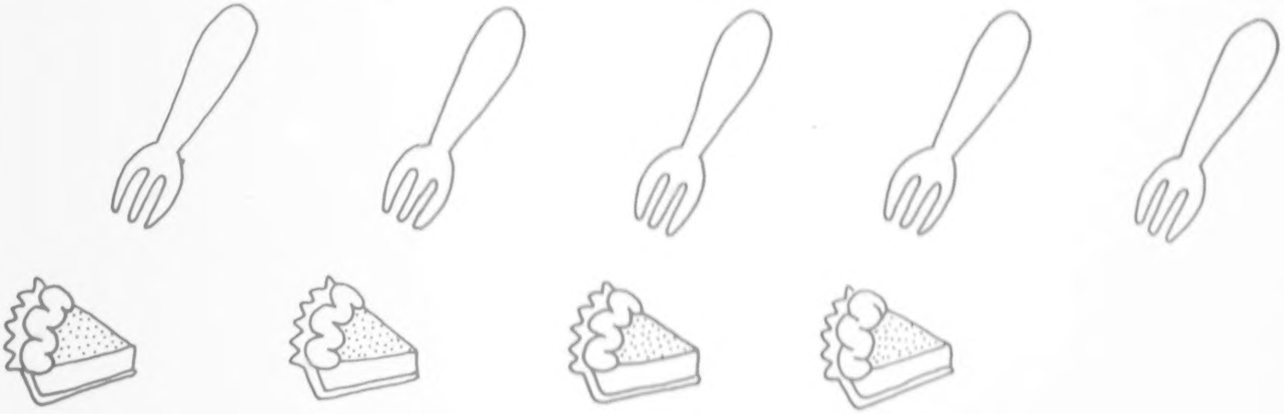
One-to-one matching Sing Astra's Song. Discuss Astra. Stress the word more while doing one-to-one matching of uneven sets. Cross out "extra" in set with more. Use appropriate Unit 2 activities/songs.

16

Name ______________________



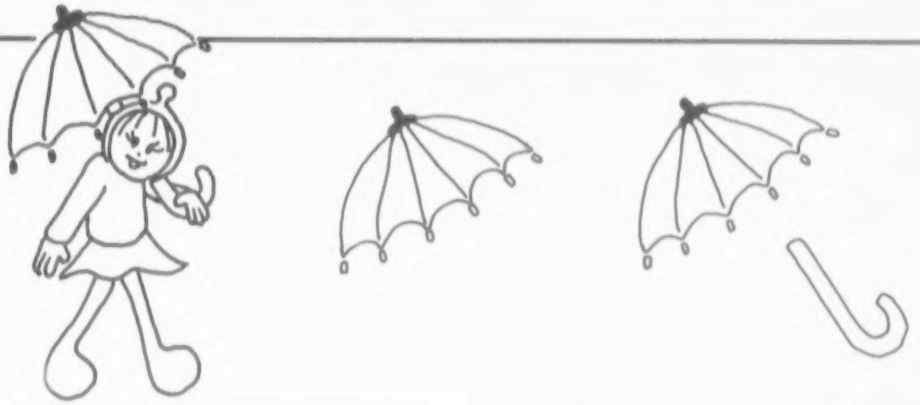


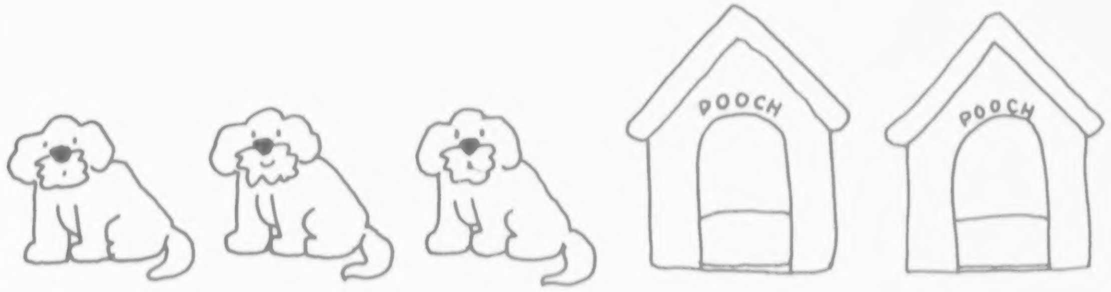


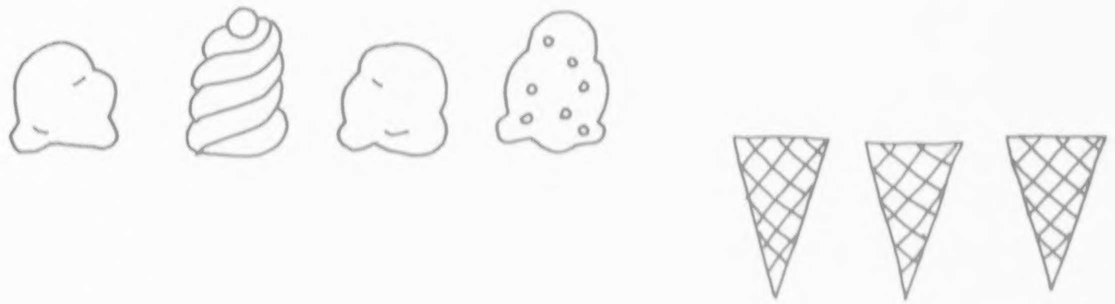
One-to-one matching

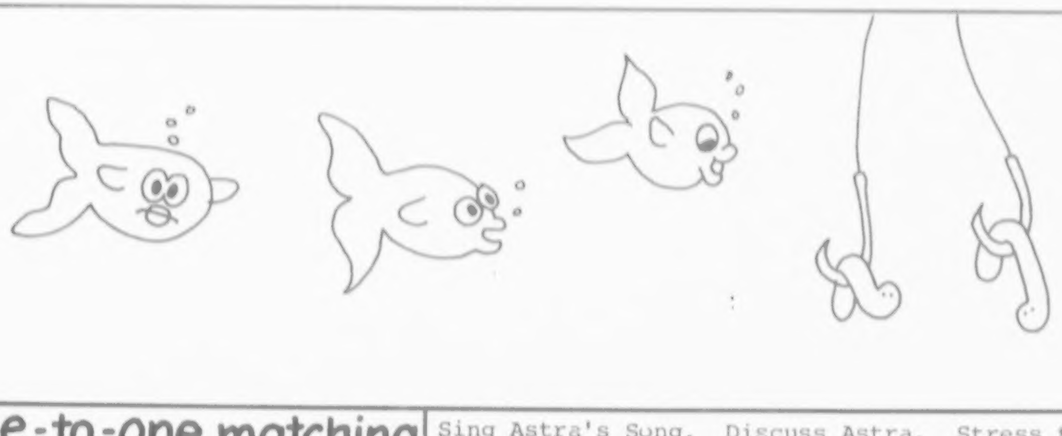
Sing Astra's Song. Discuss Astra. Stress the word less while matching uneven sets. Color the set that has "less." Use appropriate Unit 2 activities/songs.

Name ______________________





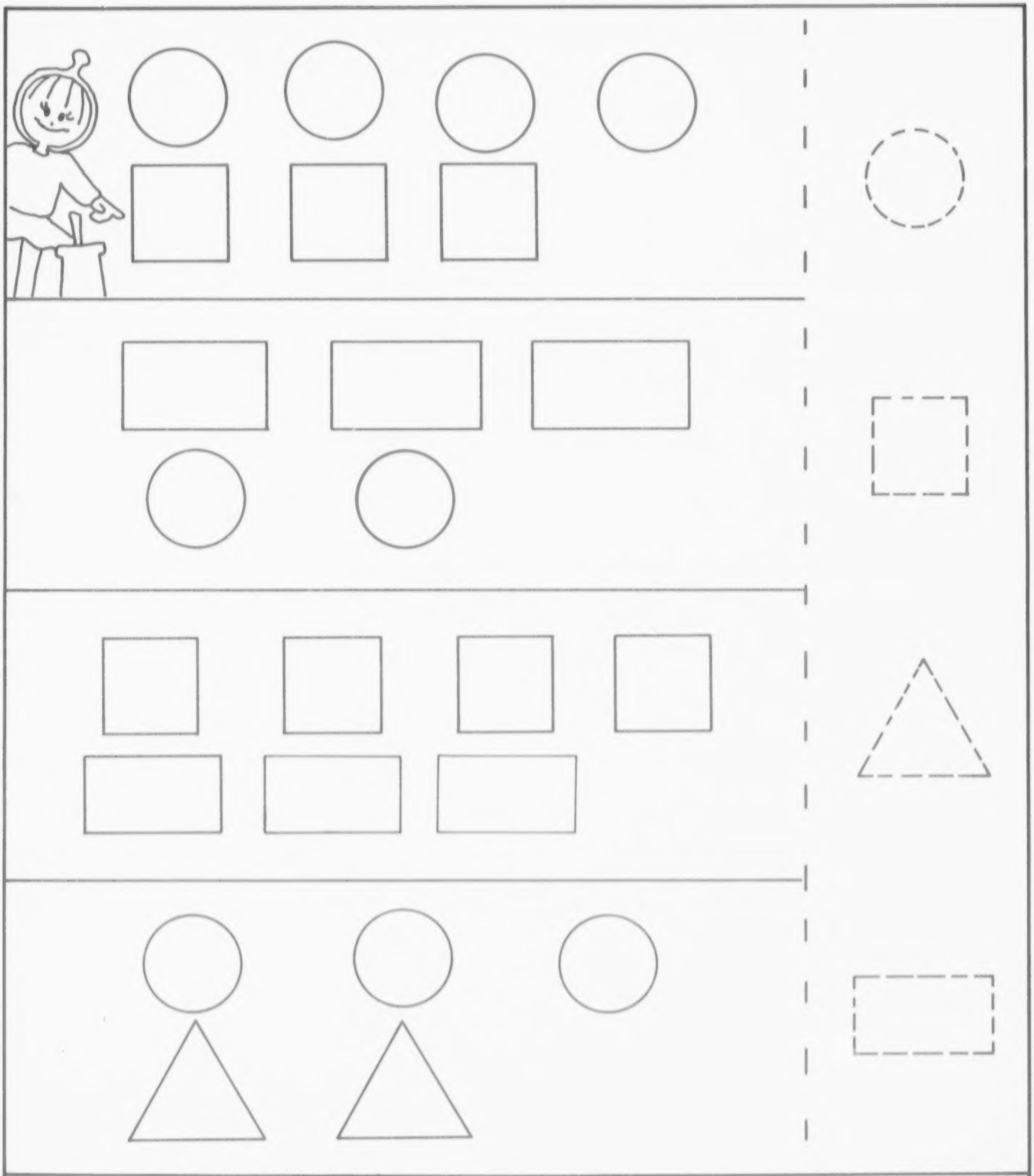




One-to-one matching Sing Astra's Song. Discuss Astra. Stress the word less while matching uneven sets. Color the set that has "less." Use appropriate Unit 2 activities/songs.

18

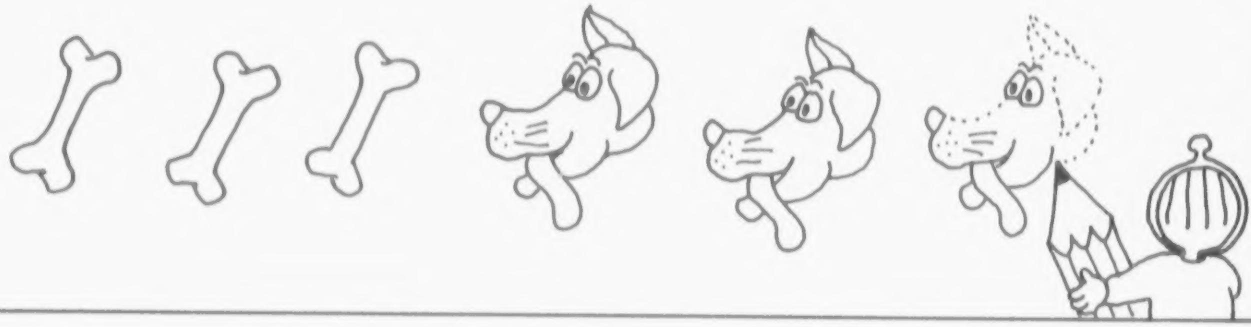
Name

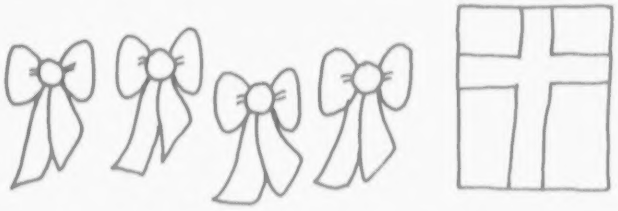


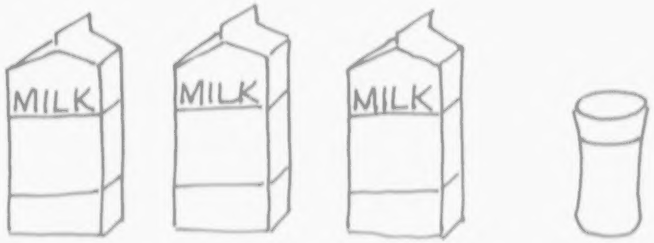
One-to-one matching

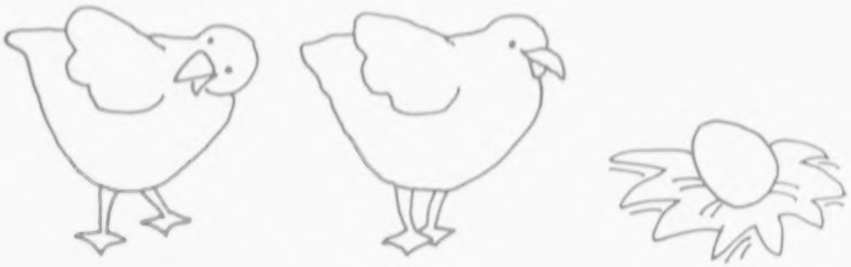
Sing Astra's Song. Discuss Astra. Review shapes and terms more, less, and same. Cut shapes and paste to make rows the same. Use appropriate Unit 2 activities/songs.

Name ______________________________ 19



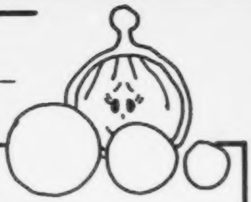


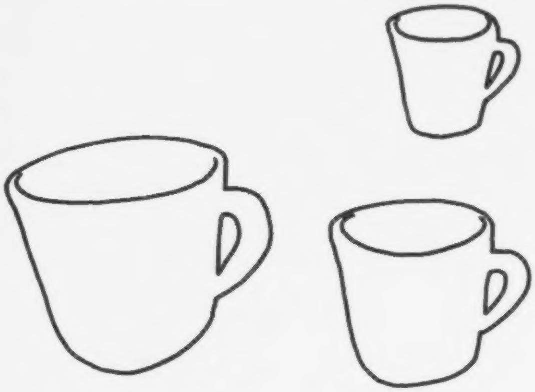




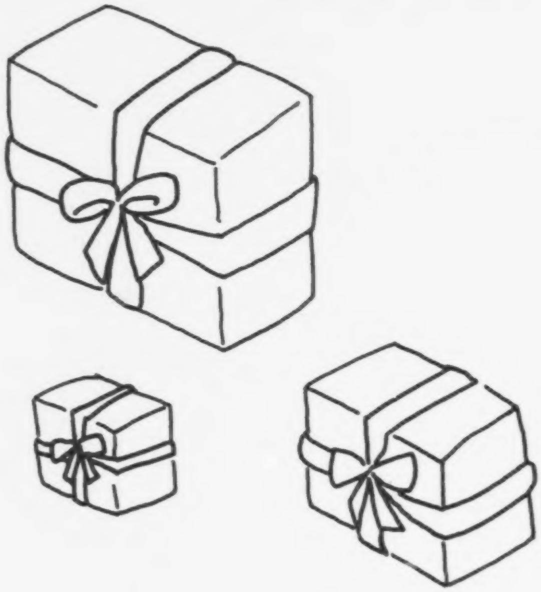
One-to-one matching Sing Astra's Song. Discuss Astra. Draw and match objects to make even sets. Review more, less, same. Use appropriate Unit 2 activities/songs.

20 Name ______________________





Find the biggest.



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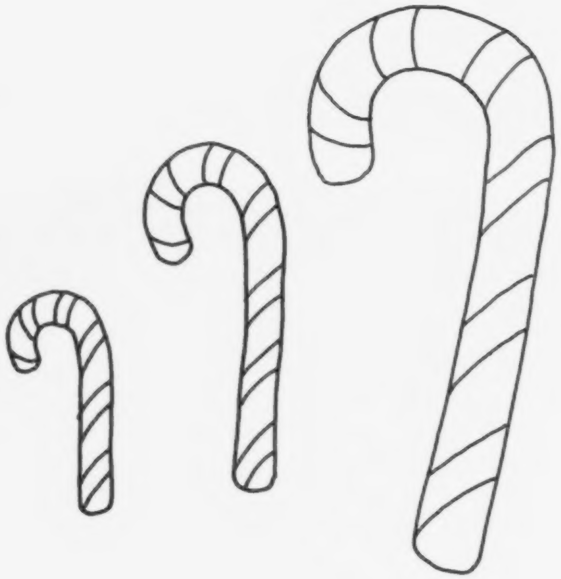
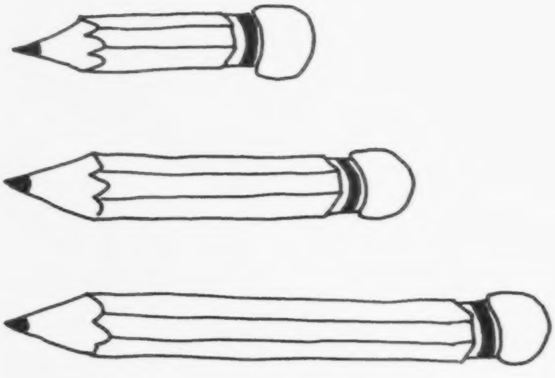


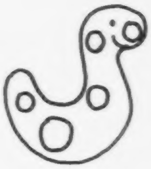
Find the shortest.

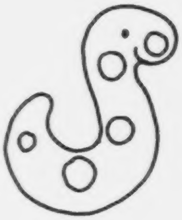


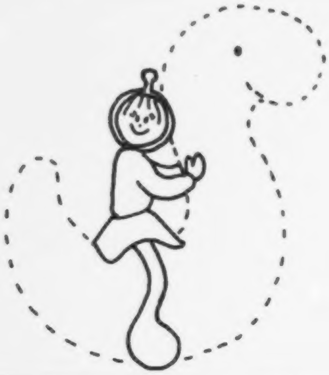
Find the longest.

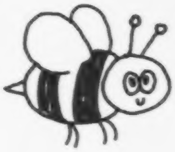
Size concepts Review unit vocabulary - big, bigger, biggest... Discuss, circle and color correct pictures. Important - Use Astra's Song. Discuss Astra and use appropriate Unit 3 activities/songs for all lessons.

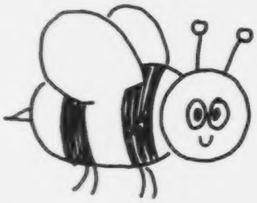
Name _______________________

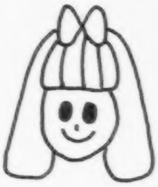


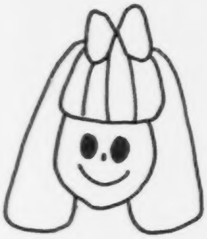


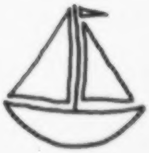


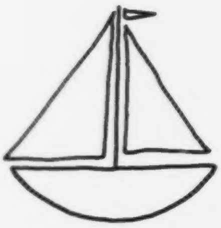










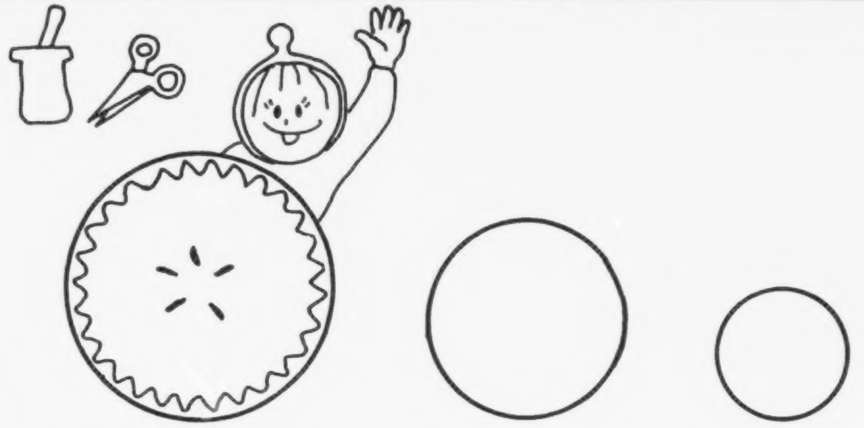


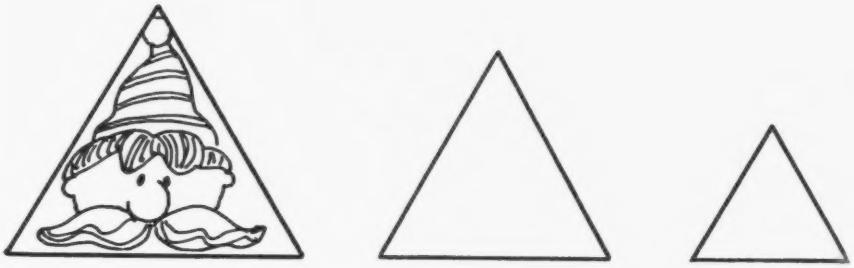
Big Bigger Biggest

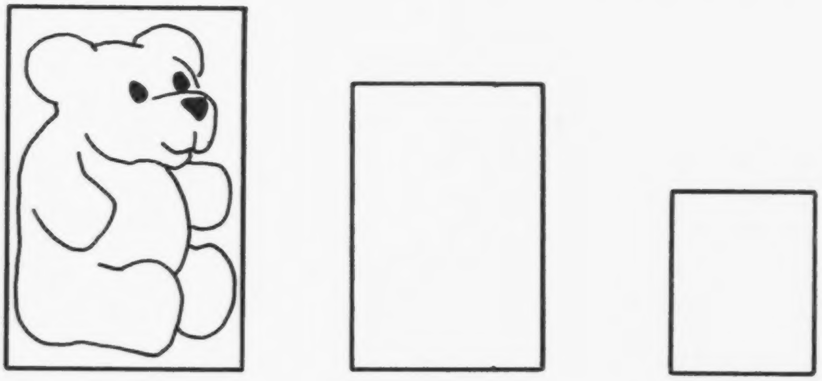
Draw the biggest object to complete each line.

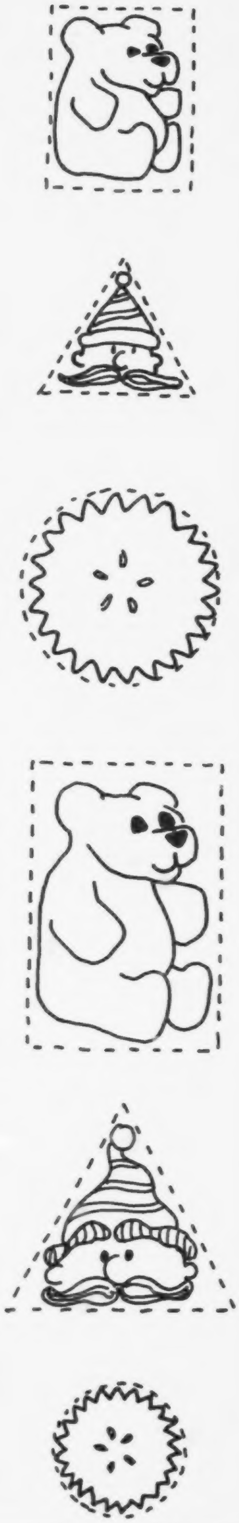
See Unit 3 Teacher's Manual.

22 Name







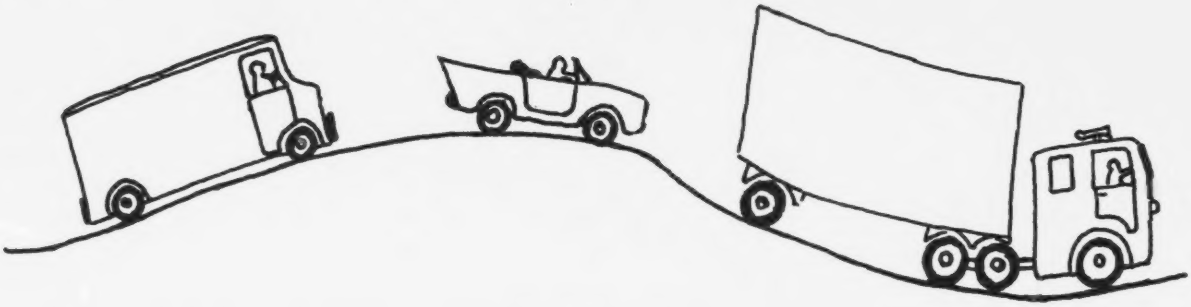


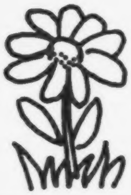
Small Smaller Smallest

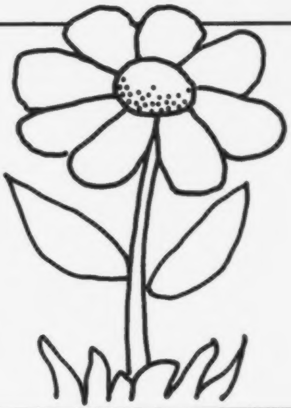
Cut and place in order.

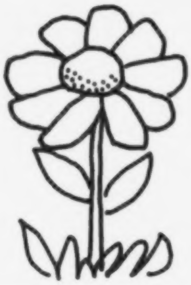
See Unit 3 Teacher's Manual.

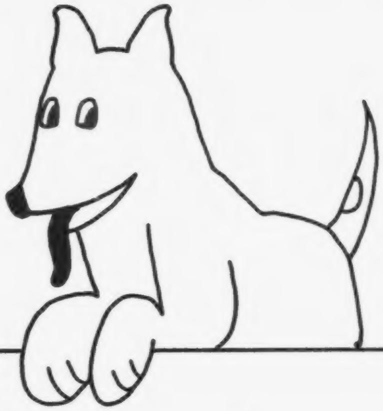
Name ______________________

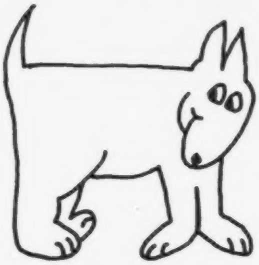


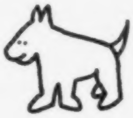


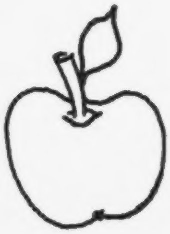


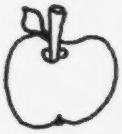


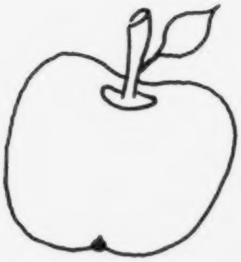










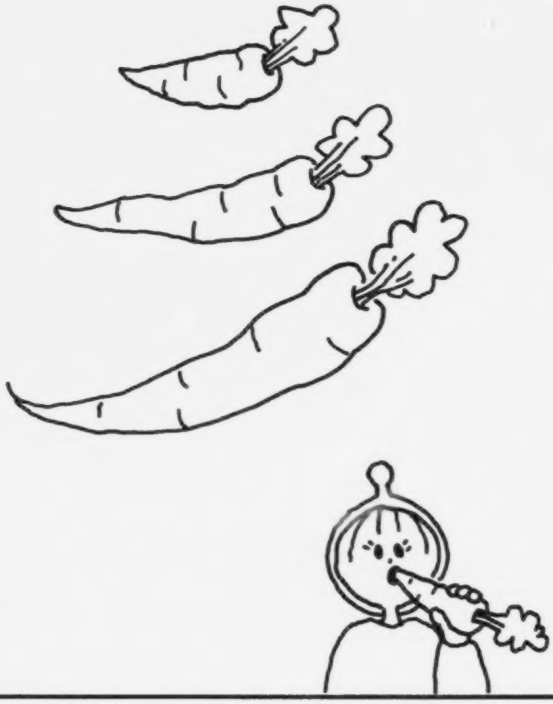


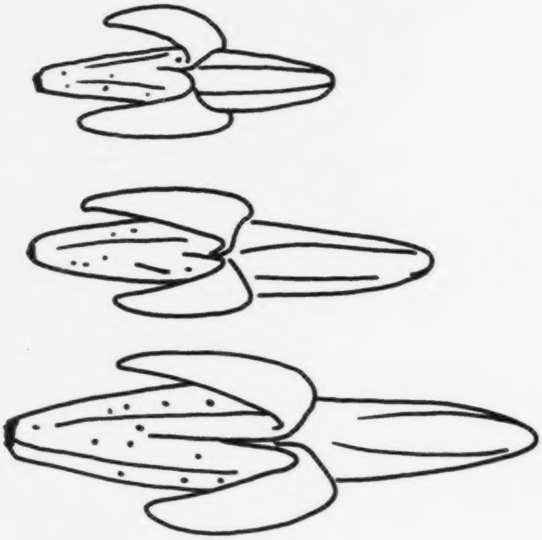
Big Bigger Biggest

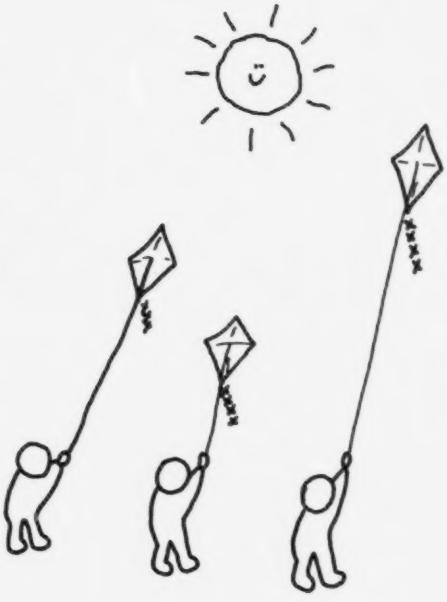
Circle and color the biggest object in each row.

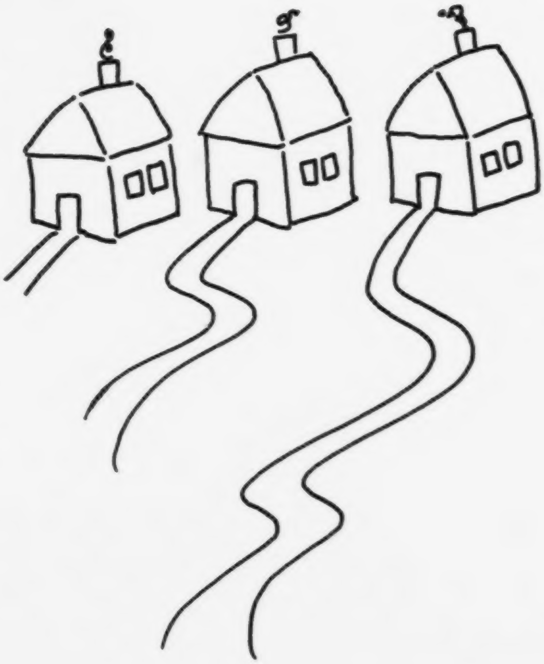
See Unit 3 Teacher's Manual.

24 Name _ _ _ _ _ _ _



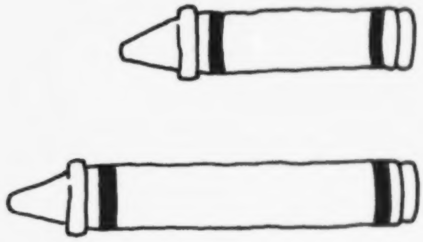


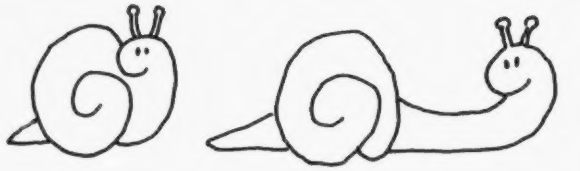


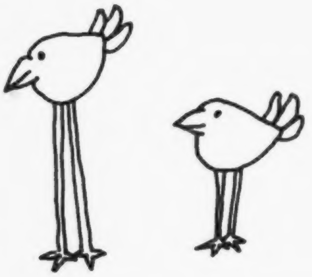


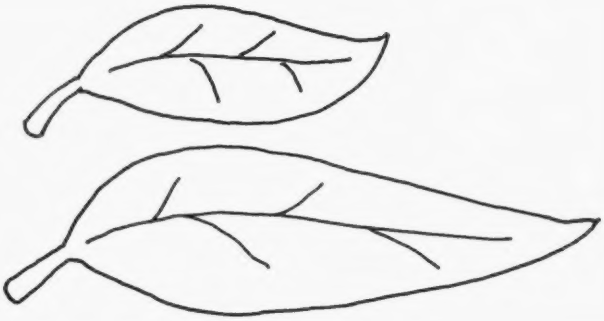
Long Longer Longest Put X on the longest. See Unit 3 Teacher's Manual.

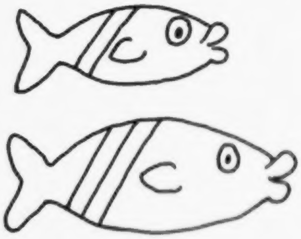
Name

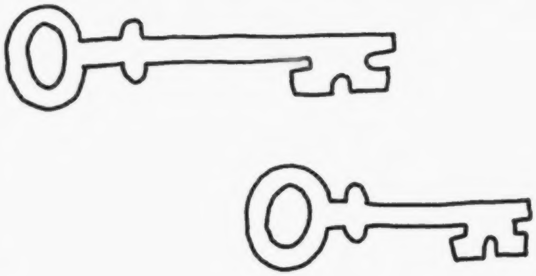


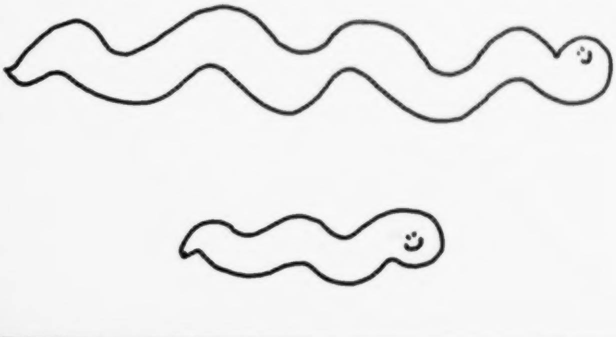


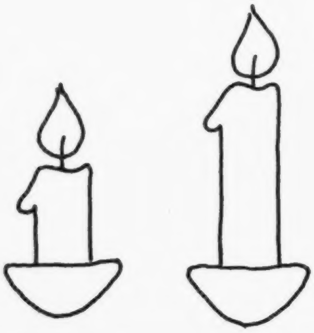








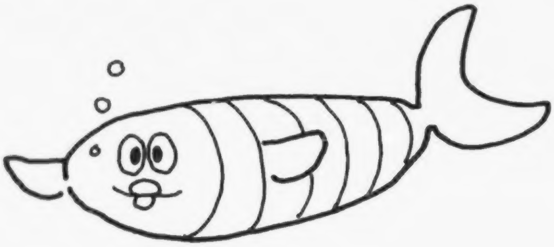


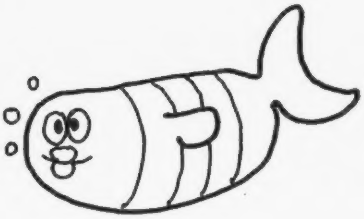


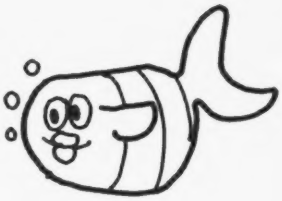
Short Shorter

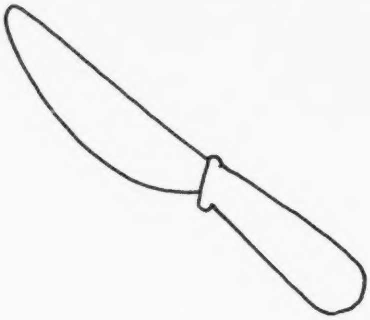
Circle and color the shorter pictures. Stress shorter.
See Unit 3 Teacher's Manual.

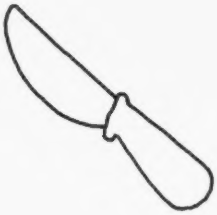
26 Name _______________

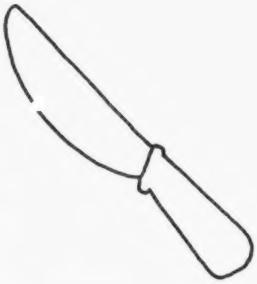


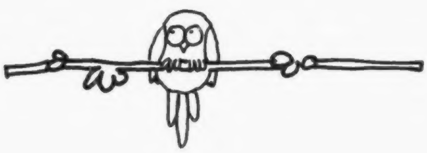


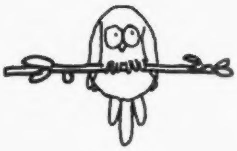


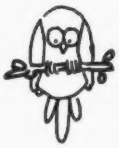


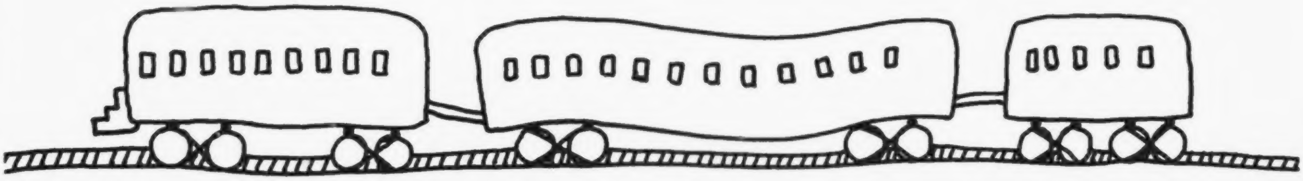






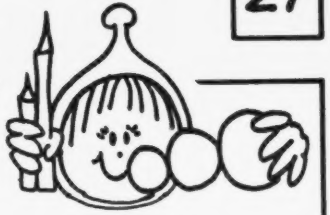


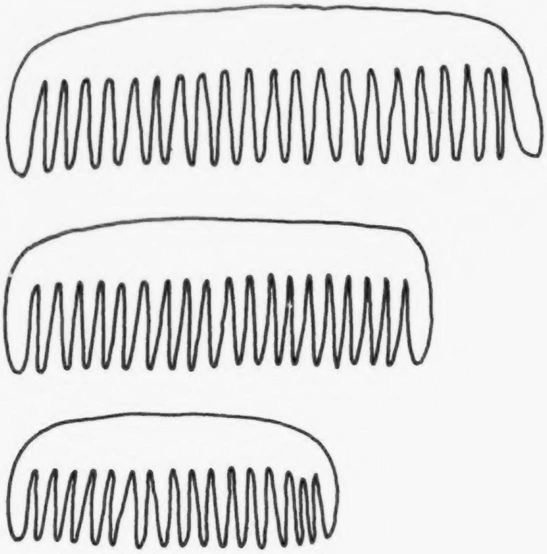


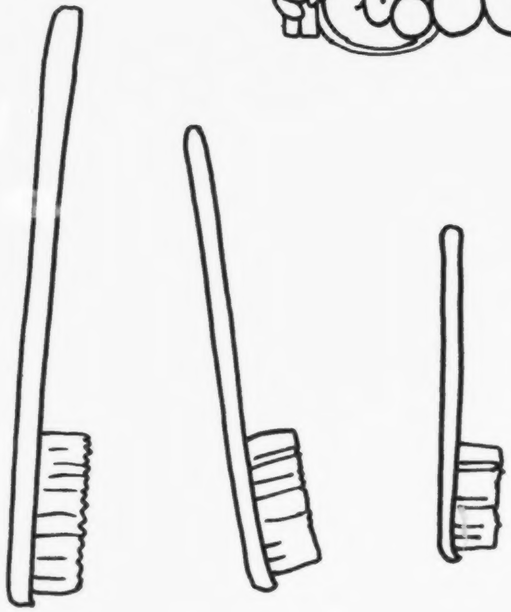


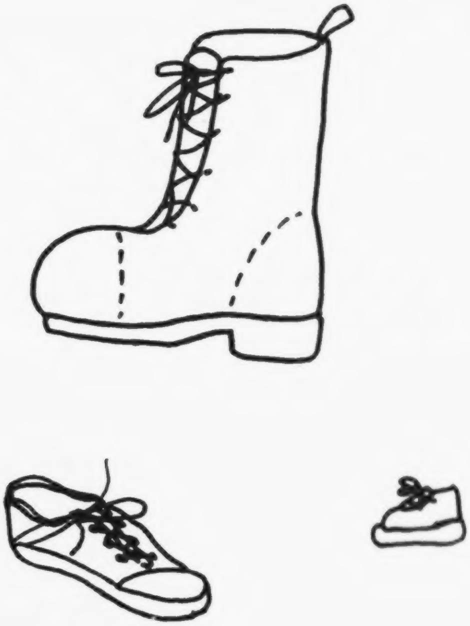
Short Shorter Shortest Circle the shortest. See Unit 3 Teacher's Manual.

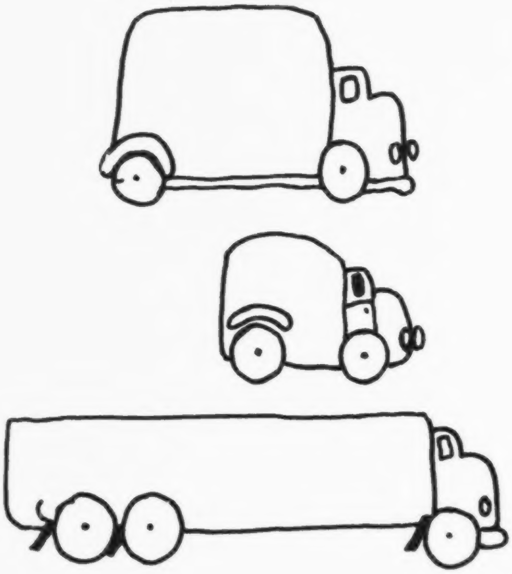
Name ____________________









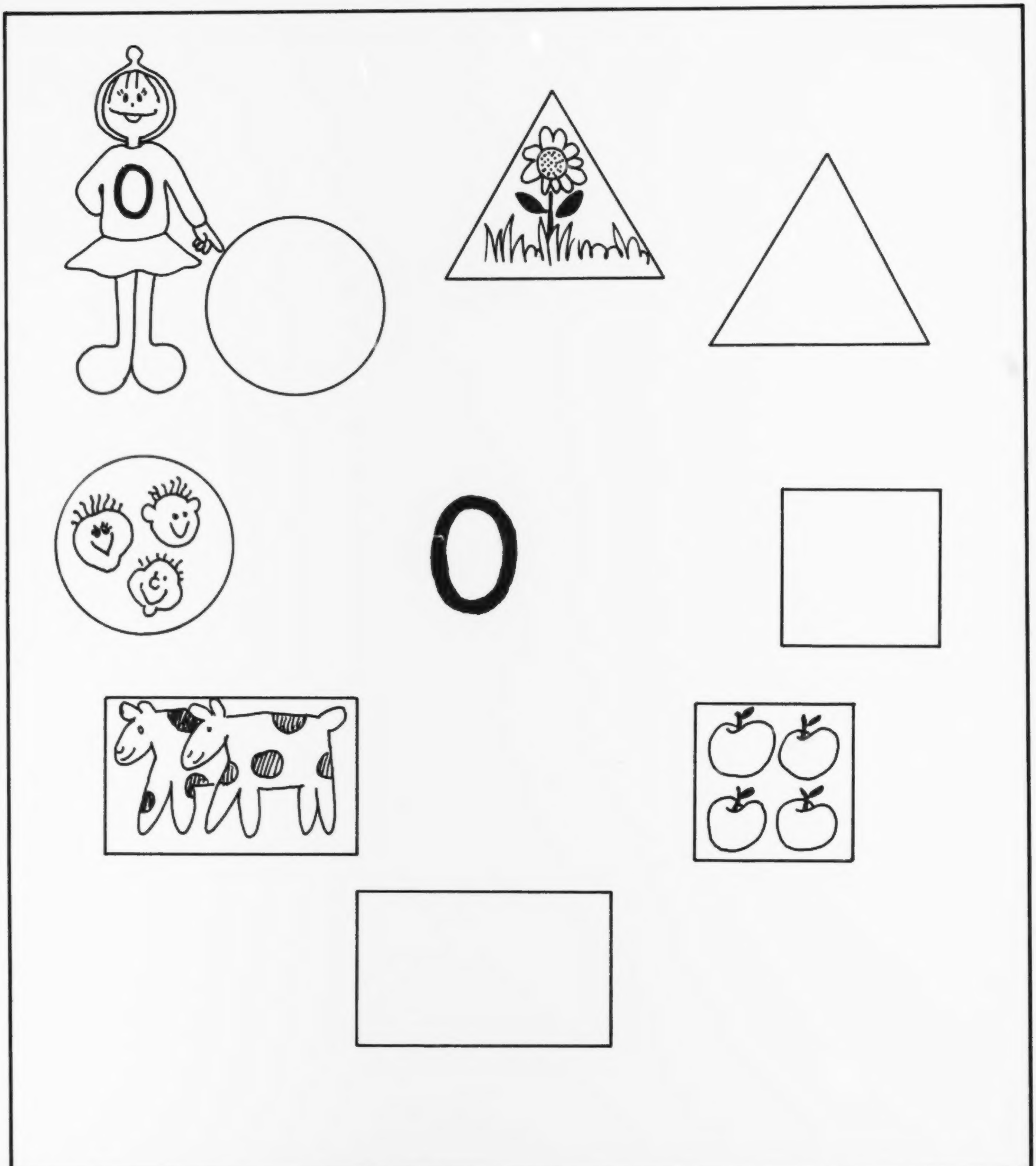


Review - Directed Lesson

Direct children to color longest comb, shortest toothbrush, biggest shoe, smallest truck.
See Unit 3 Teacher's Manual

28

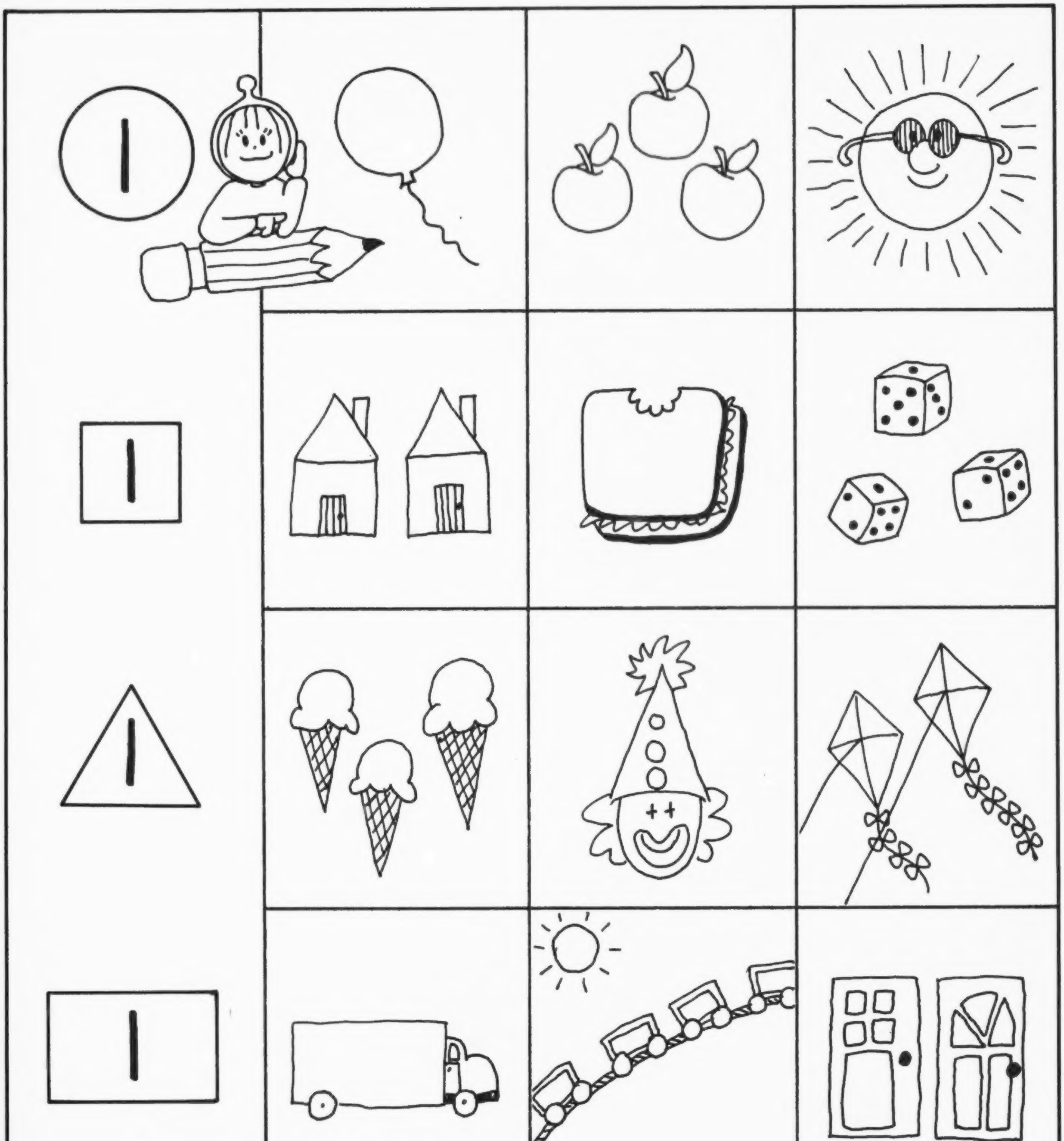
Name ______________________



Review Shapes - Learn O

Count objects in shapes - locate empty shapes and draw lines to O. Cross out others. Important - Sing Astra's Song, discuss Astra and use appropriate Unit 4 activities/poems for all lessons.

Name ____________________

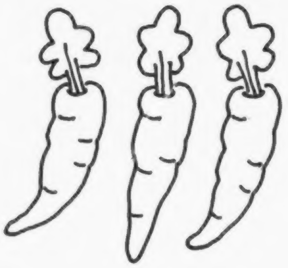


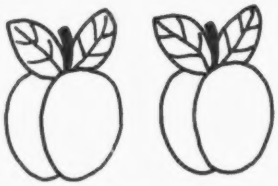
Learn 1 Count sets. Circle and color sets of 1. Cross out others. See Unit 4 Teacher's Manual.

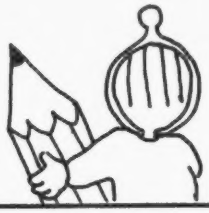
30

Name ______________________

2







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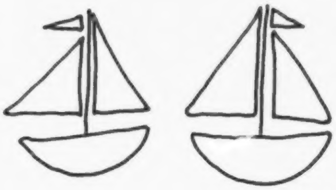

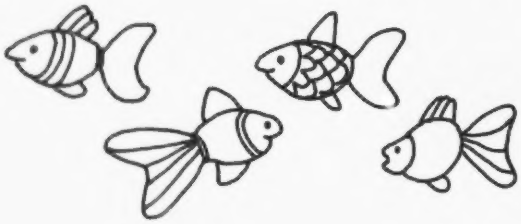

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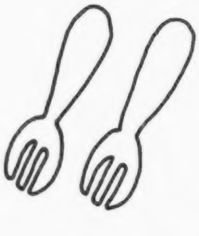

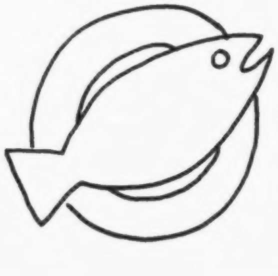

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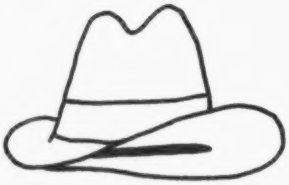
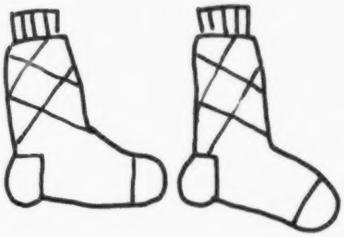




Learn 2 Draw a line from the number to the correct set in each box. Color that set.
See Unit 4 Teacher's Manual.

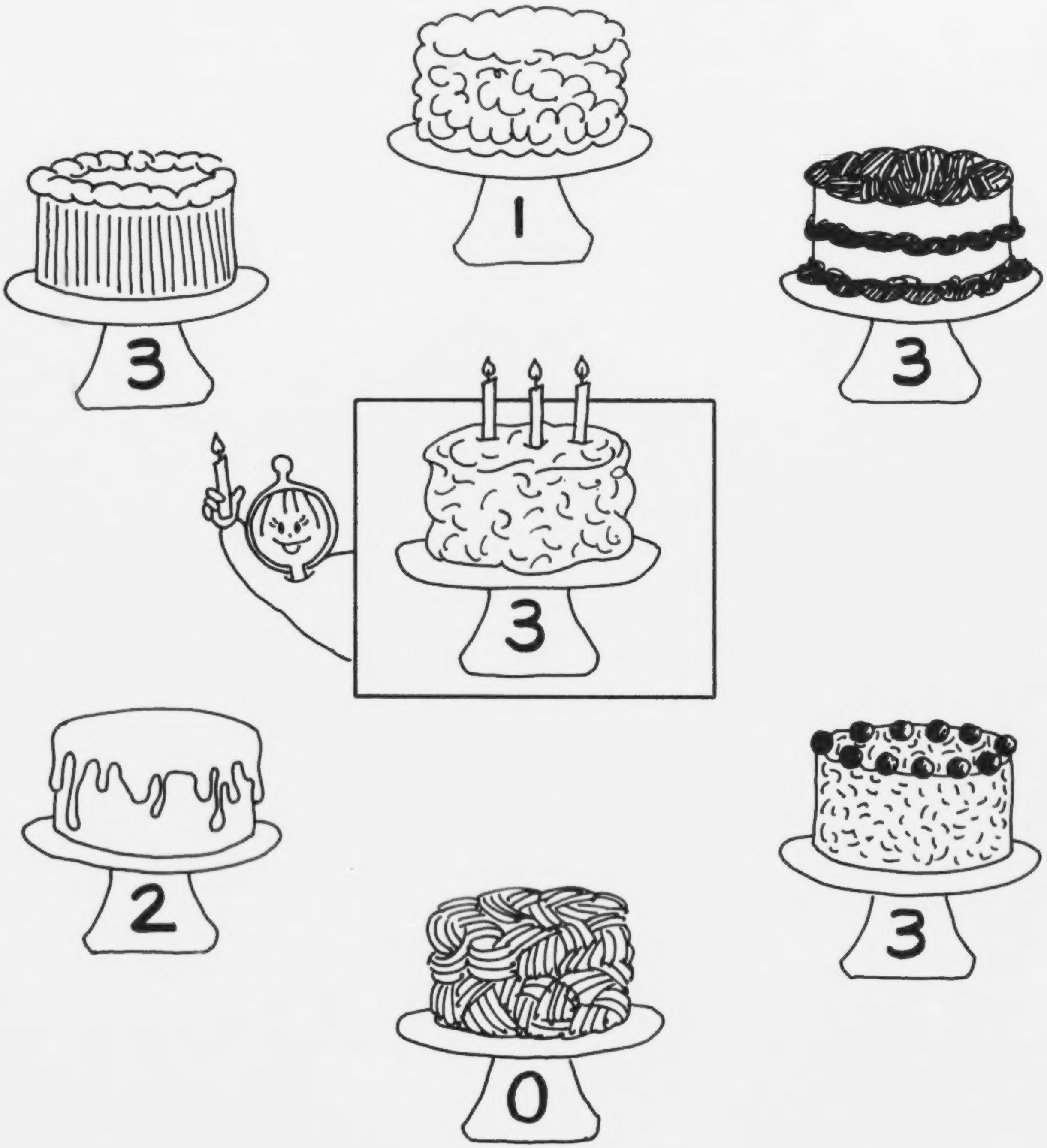
Name _ _ _ _ _ _ _

0	1
1	2

Review 0,1,2

Draw correct number of flowers. See Unit 4 Teacher's Manual.

32 Name ________________



Learn 3 - Review 0,1,2 Draw correct number of candles on cakes. Draw line from cake in box to cakes with 3 candles. See Unit 4 Teacher's Manual.

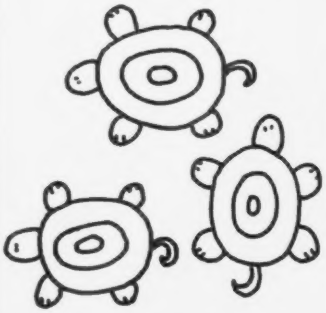
Name ______________________________

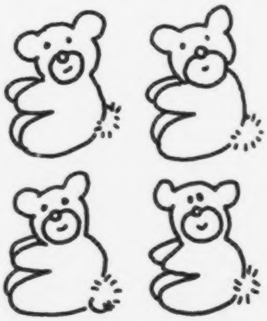
4

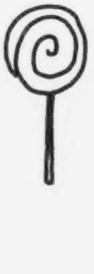
4

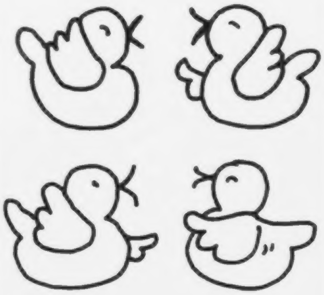
4

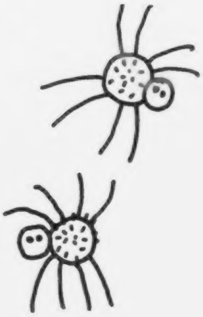
4

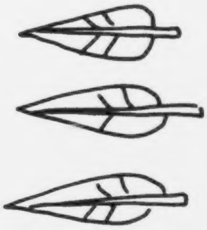


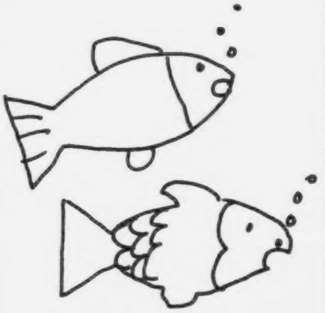


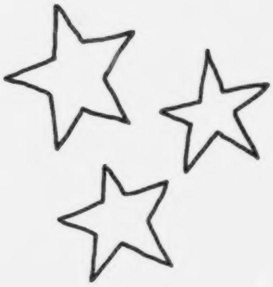


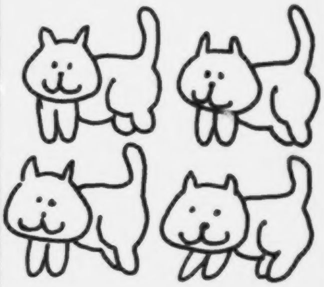


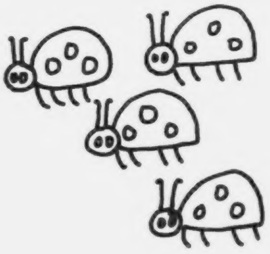


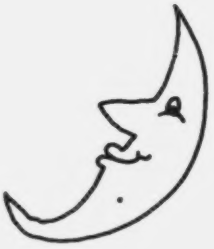


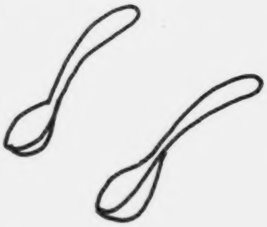










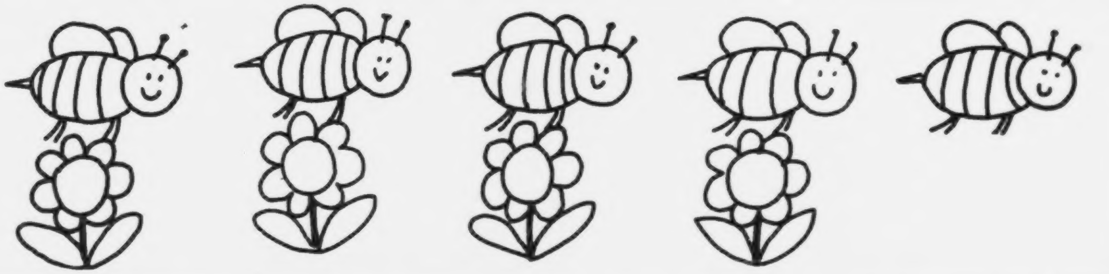


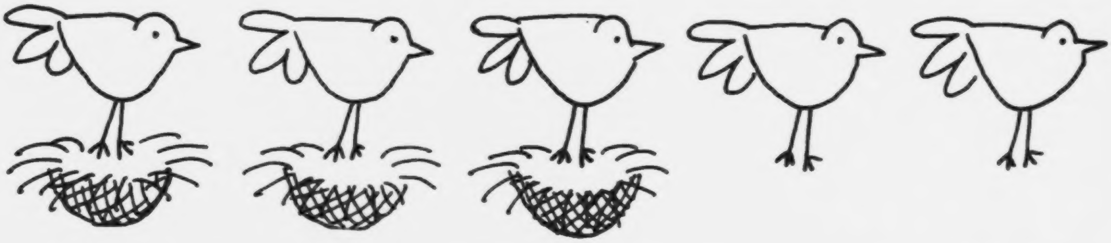
Learn 4 Circle and color sets of four. Cross out others. See Unit 4 Teacher's Manual.

34

Name ____________________

5





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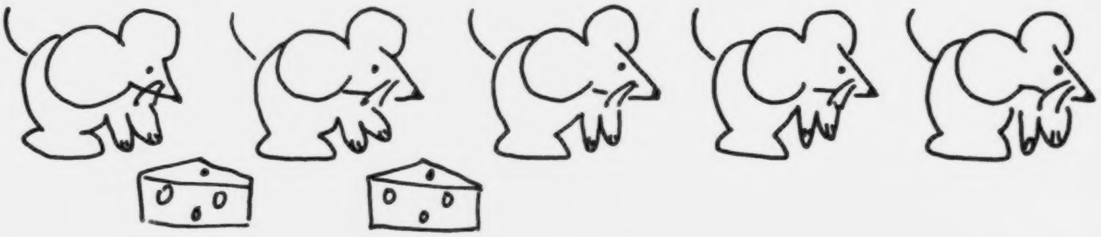

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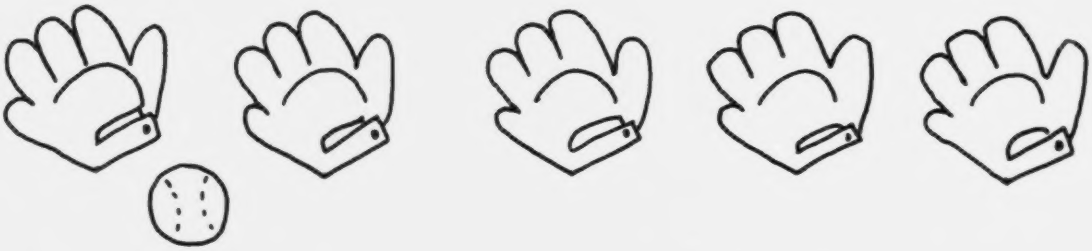

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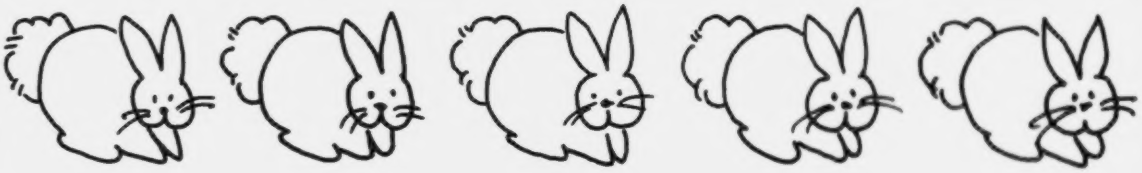


Learn 5 and Review

Review numbers and one-to-one matching. Make all sets five.
See Unit 4 Teacher's Manual.

Name _______________________________

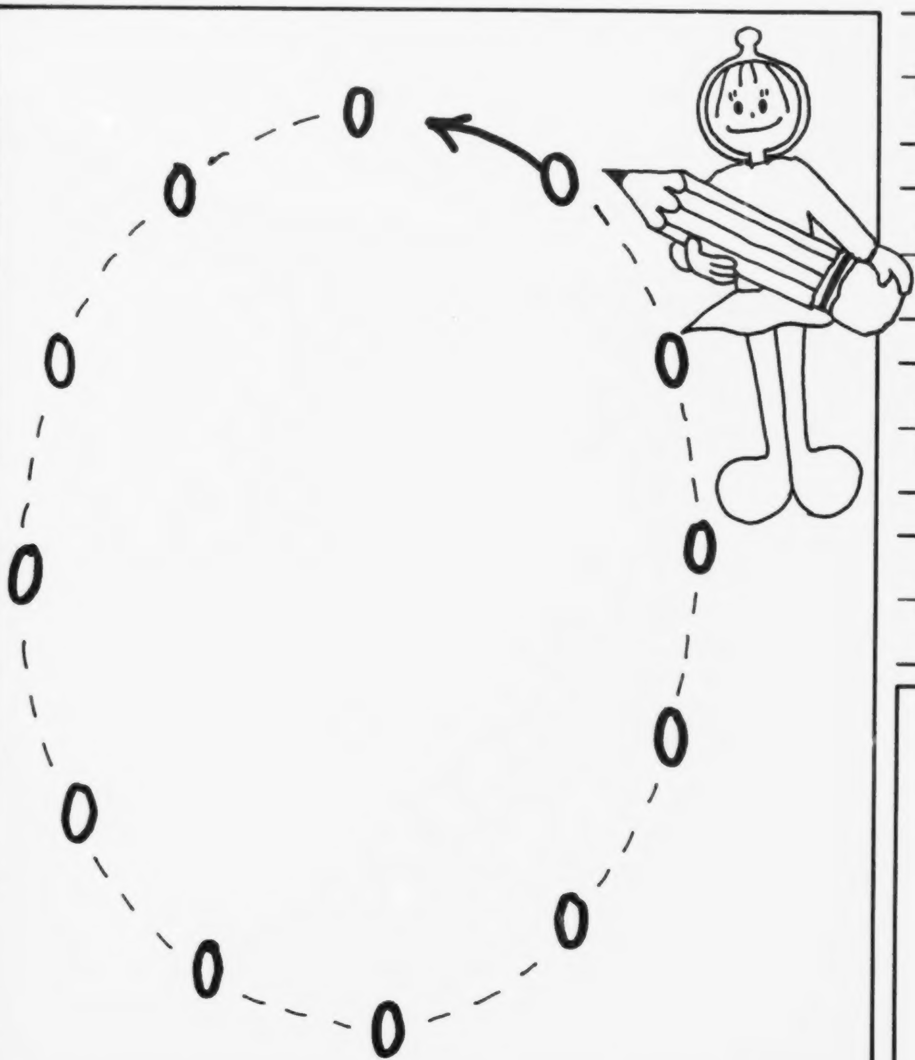
35

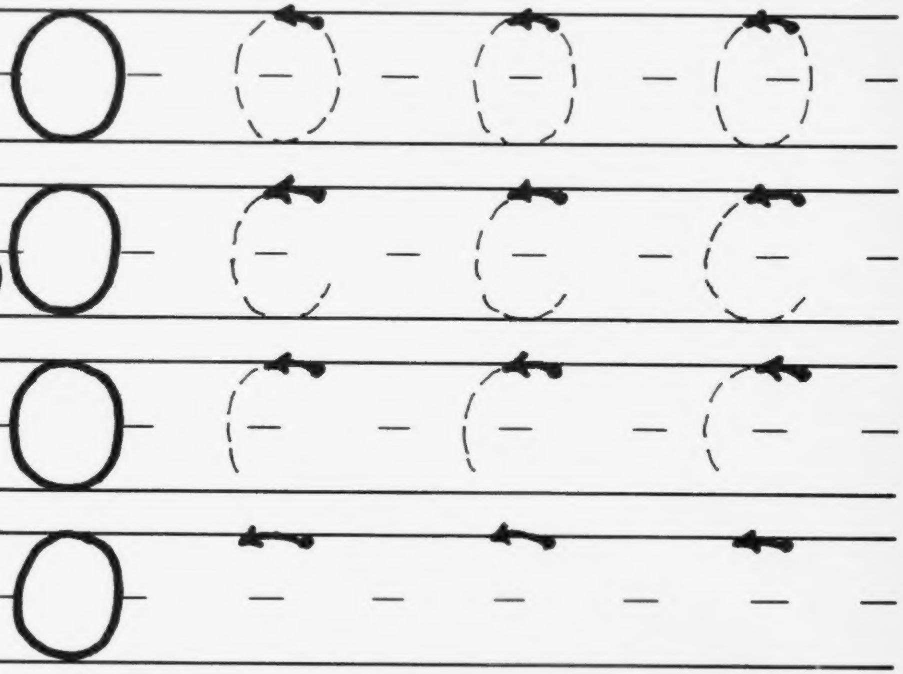
0	1
2	3
4	5

Review 0-5 Draw correct number of ice cream cones. See Unit 4 Teacher's Manual.

Name

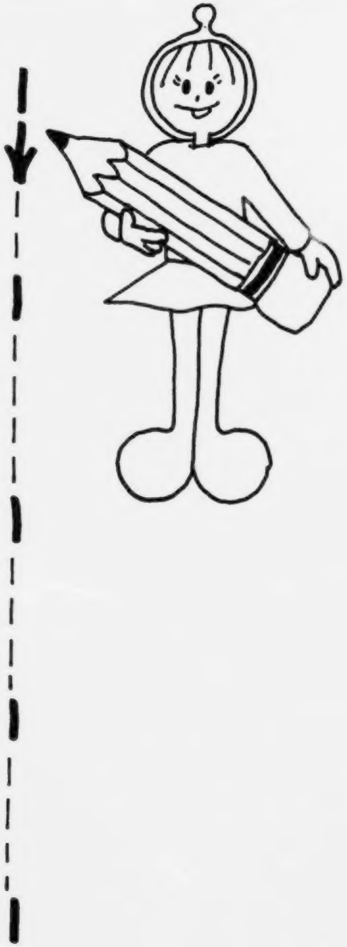
36





Writing 0 Recite 0 poem. Trace and write all 0's. Note empty set. Important - Use Astra's Song, discuss Astra and use appropriate Unit 5 activities/poems for all lessons.

37 Name

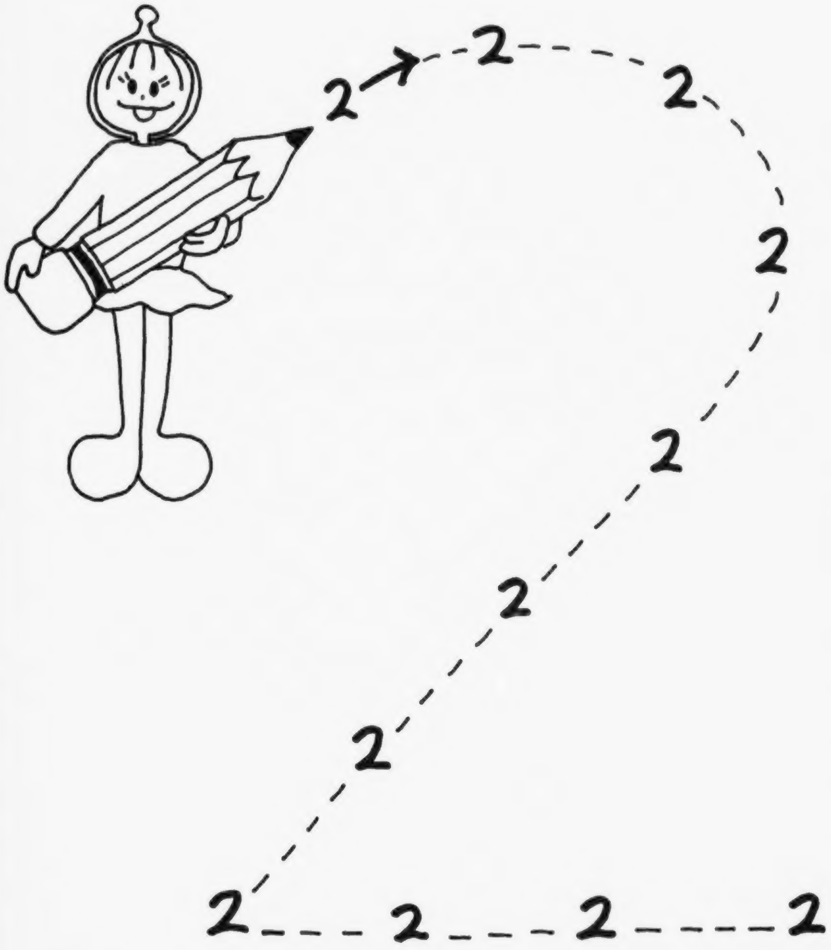


Writing 1

Recite 1 poem. Trace and write all 1's. Draw 1 object in box. See Unit 5 Teacher's Manual.

Name

38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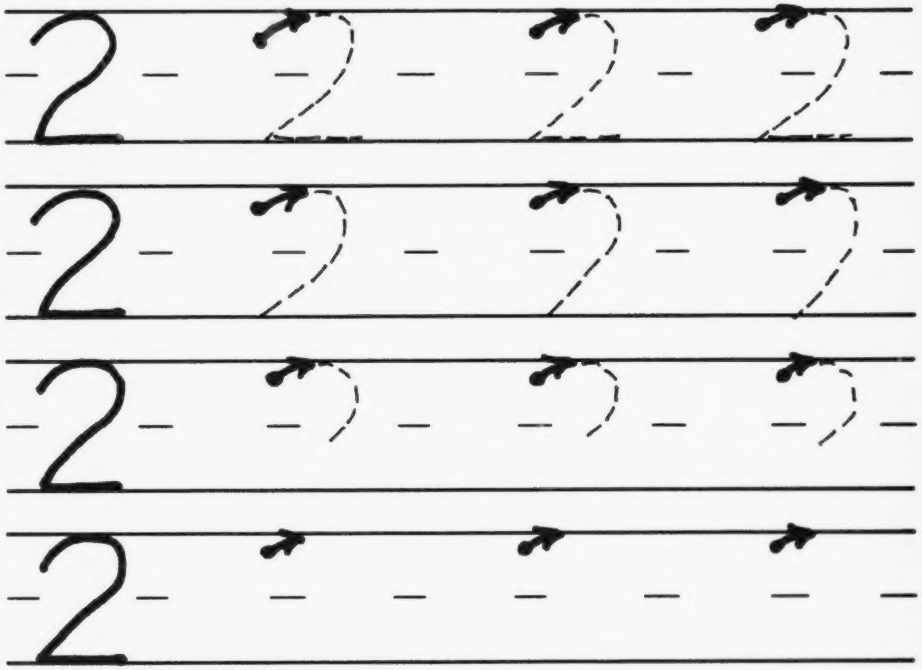
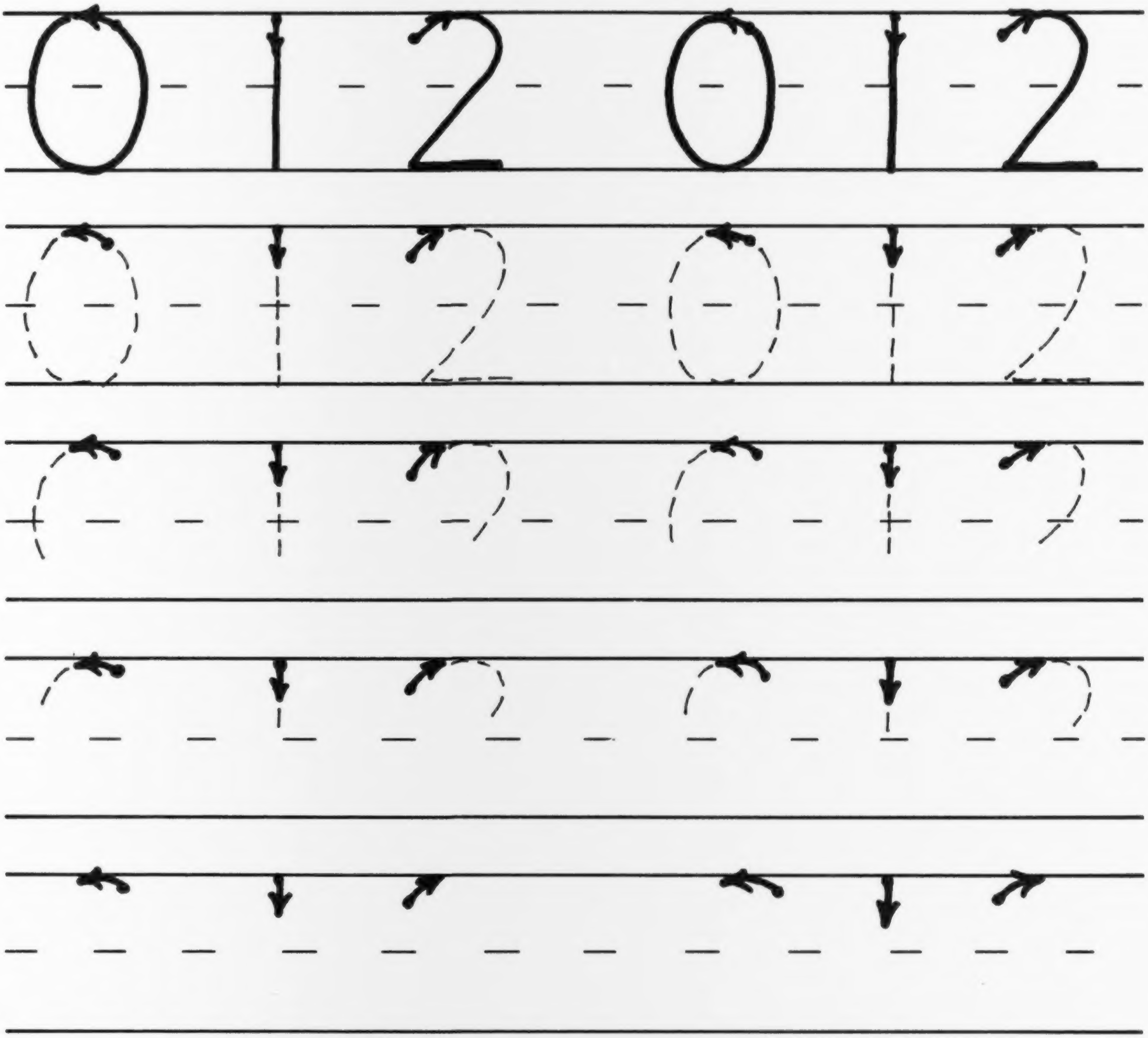
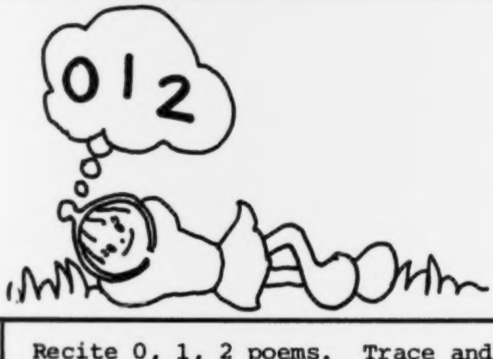


Writing 2

Recite 2 poem. Trace and write all 2's. Draw 2 objects in the box. See Unit 5 Teacher's Manual.

Name ________________



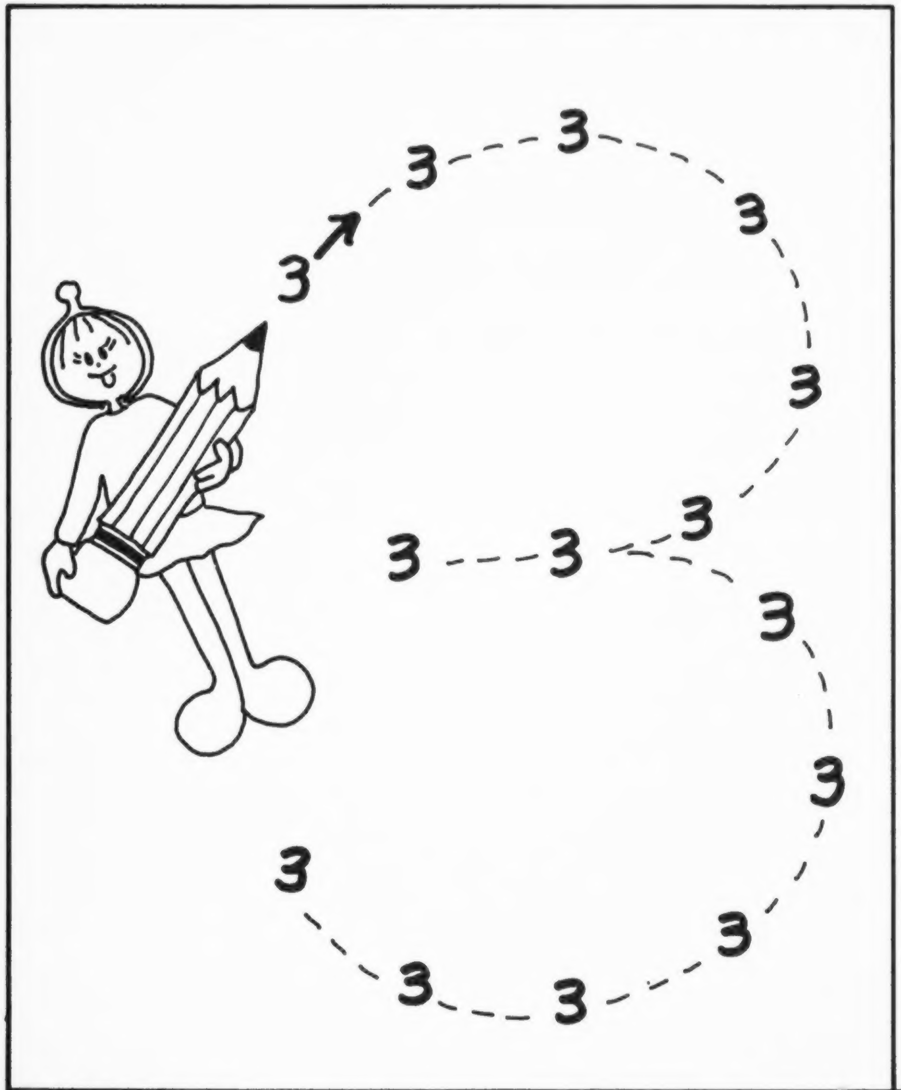


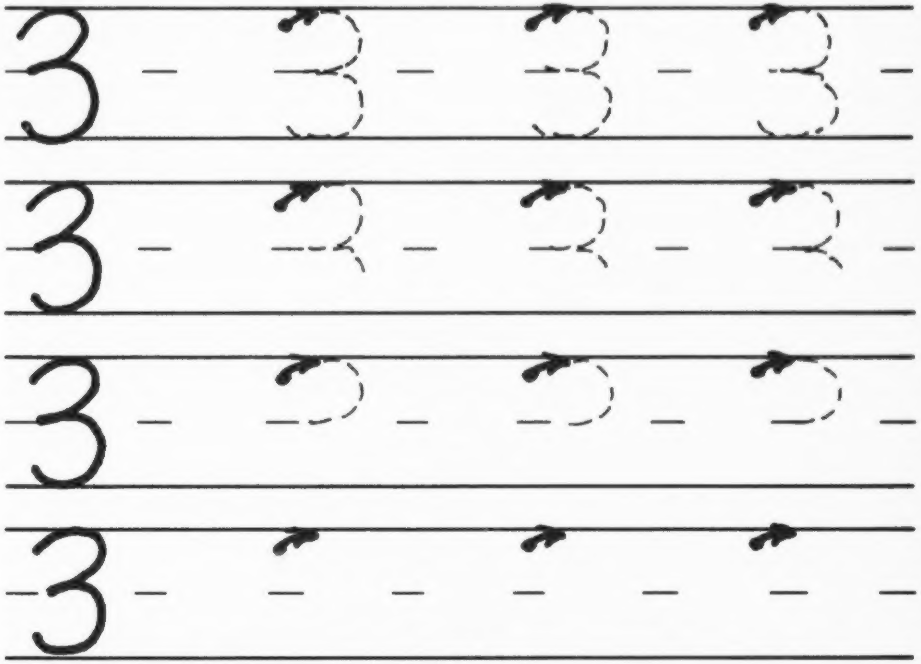
Writing 0,1,2

Recite 0, 1, 2 poems. Trace and write 0, 1, 2. See Unit 5 Teacher's Manual.

Name

40

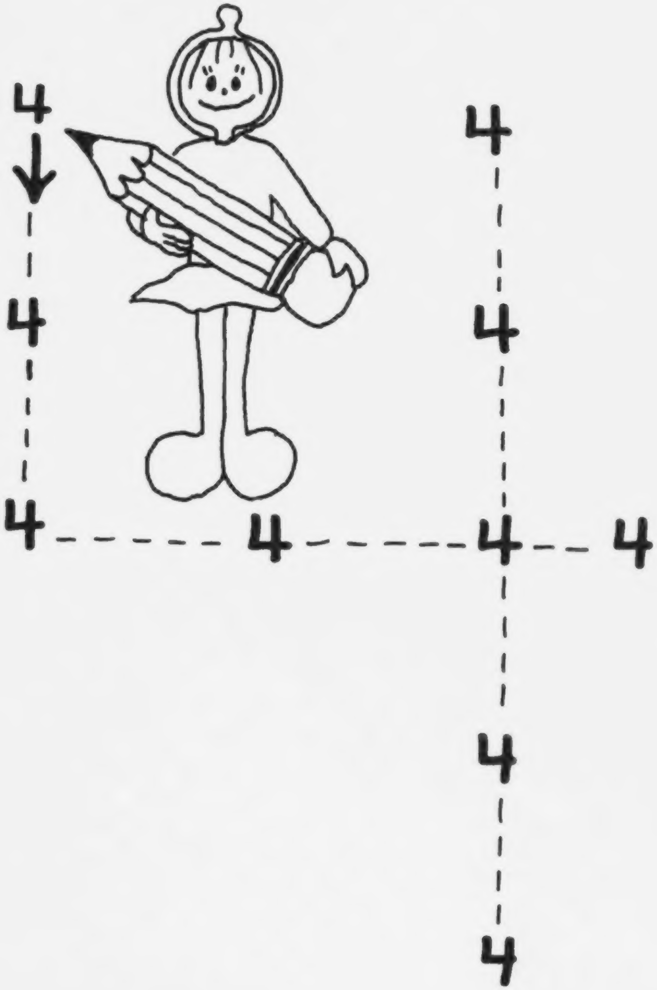


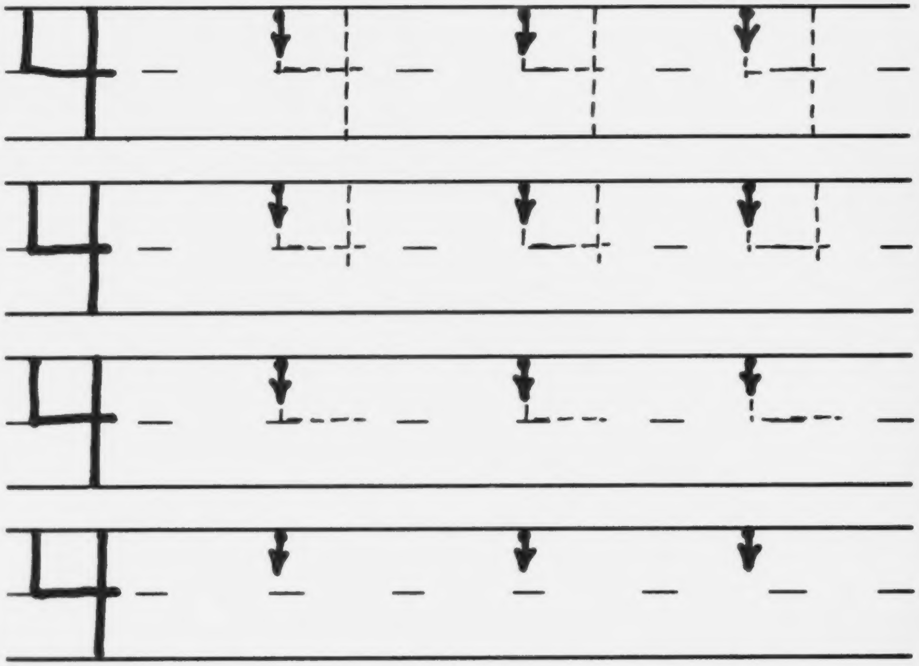


Writing 3

Recite 3 poem. Trace and write all 3's. Draw 3 objects in the box.
See Unit 5 Teacher's Manual.

41 Name ______________________

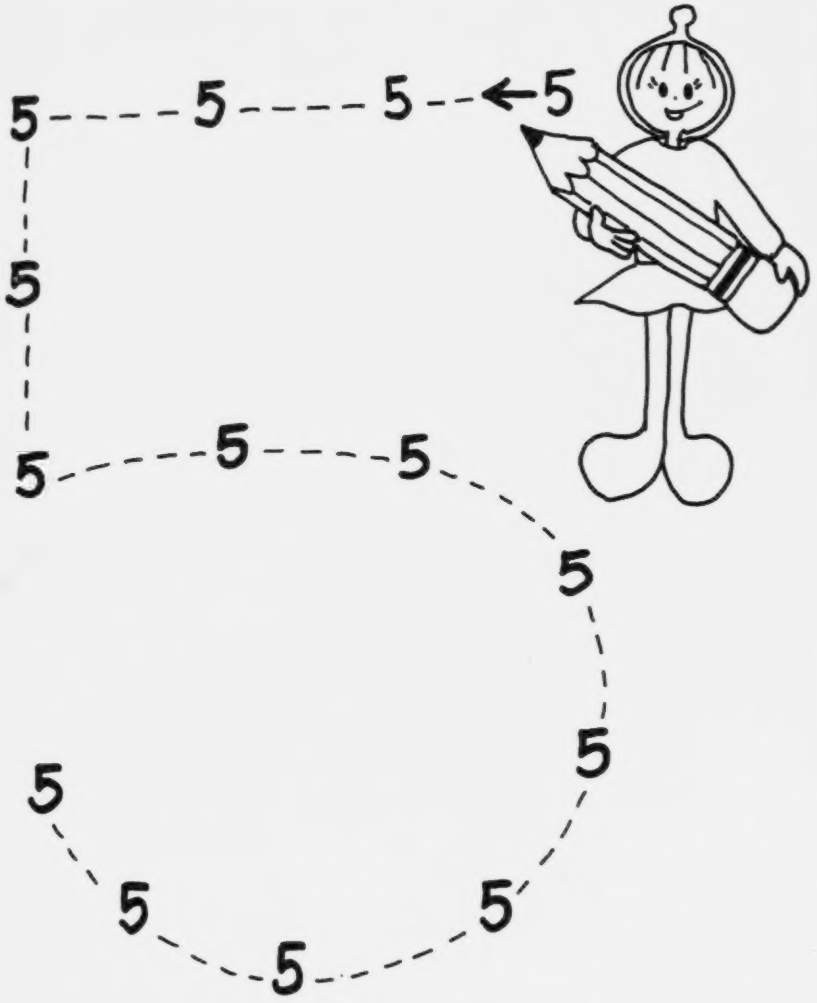




Writing 4

Recite 4 poem. Trace and write all 4's. Draw 4 objects in the box. See Unit 5 Teacher's Manual.

Name ______________________________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Writing 5

Recite 5 poem. Trace and write all 5's. Draw 5 objects in the box. See Unit 5 Teacher's Manual.

Name ______________________

43

0

1

2

3

4

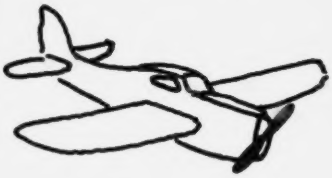
5

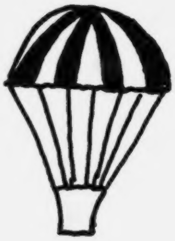
0,1,2,3,4,5 Recite number poems. Stress after. See Unit 5 Teacher's Manual.

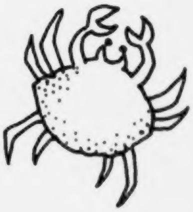
44

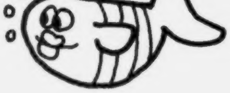
Name

1









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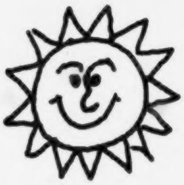

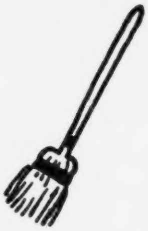

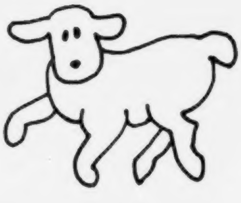

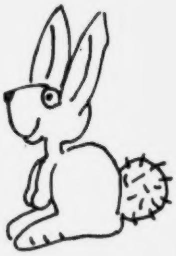

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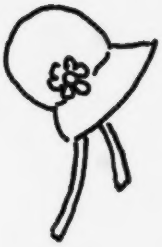

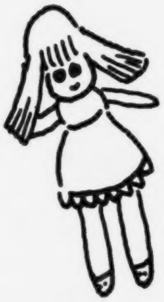

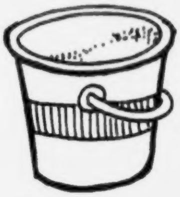

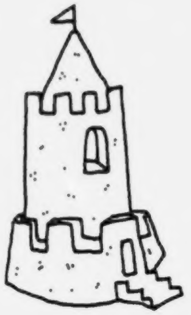

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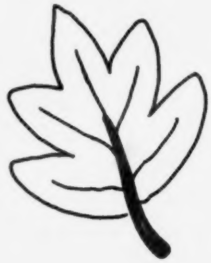
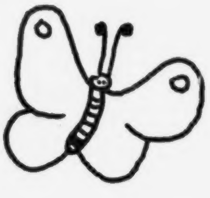
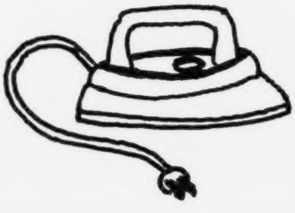
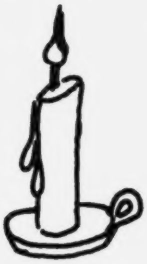




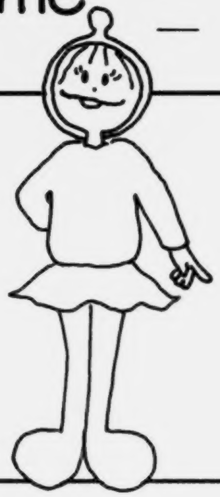
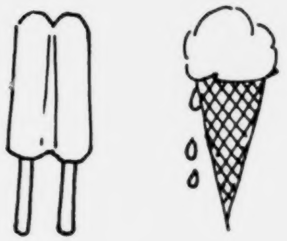
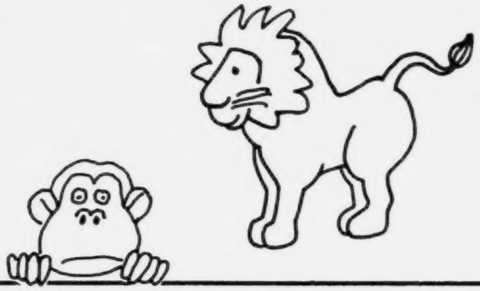
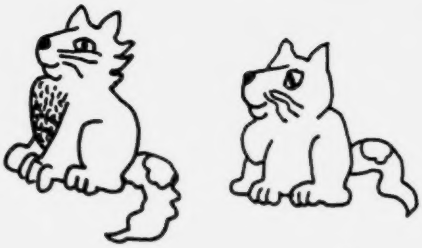
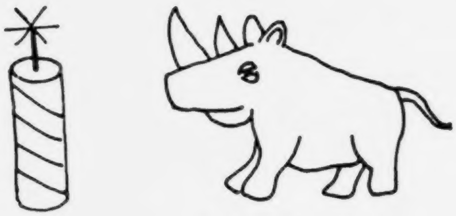
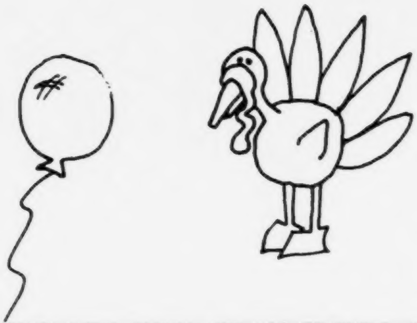
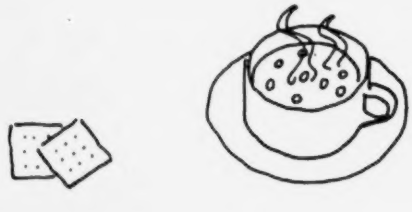
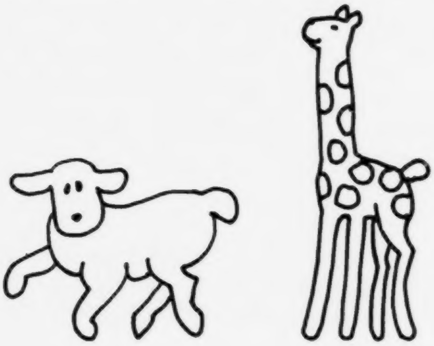




Left

Mark and color the picture on the left in each set. Important - Sing Astra's Song, discuss Astra and use appropriate Unit 6 activities/poems for all lessons.

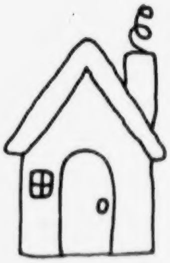
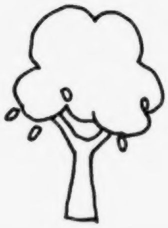
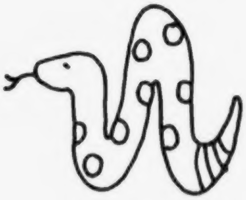
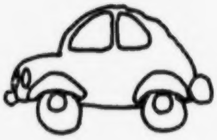
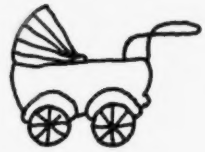
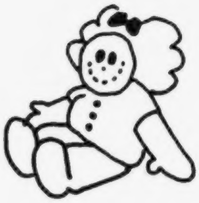
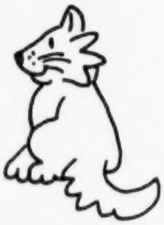
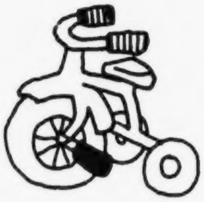
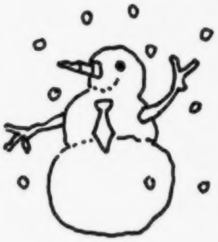
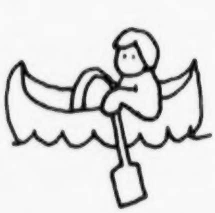
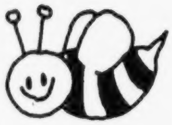
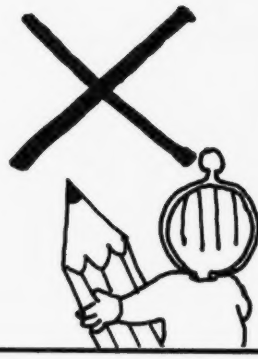
Name _______________________

1		
2		
3		
4		

Right

Mark and color the picture on the right in each set. See Unit 6 Teacher's Manual.

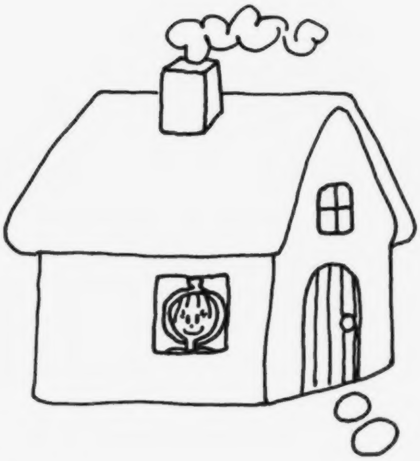
46 Name ______________________

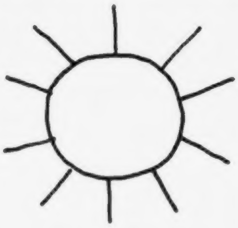
1			
2			
3			
4			

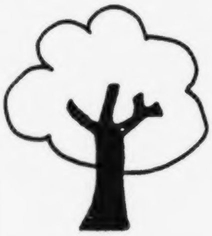
Above Put X above each picture. See Unit 6 Teacher's Manual.

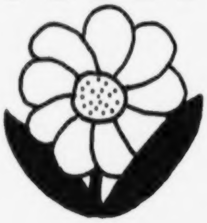
Name _______________

1









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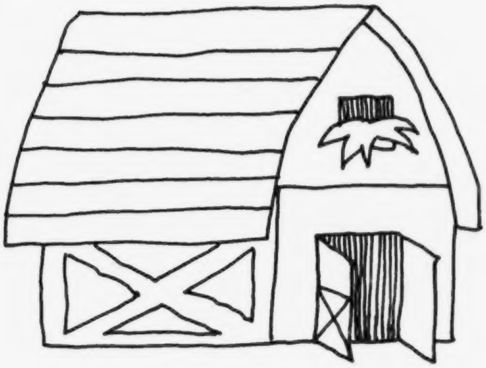
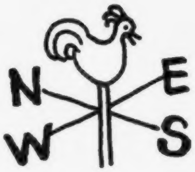
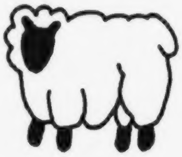
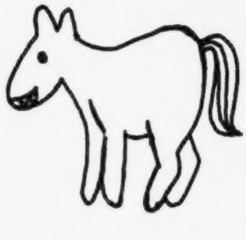






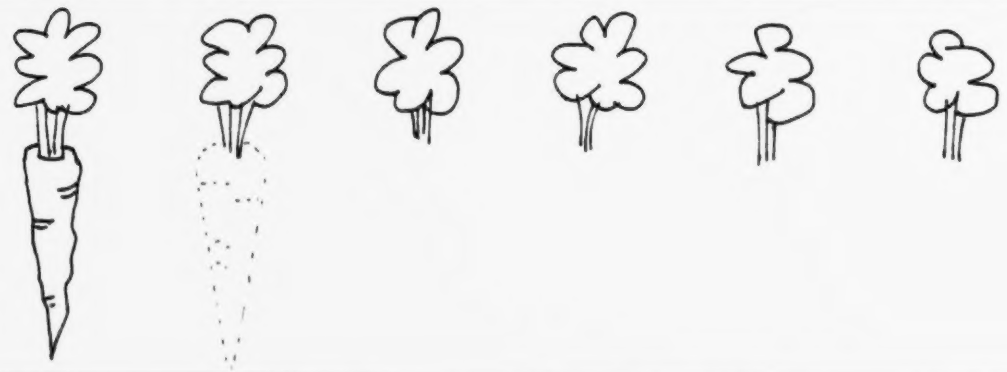


Above, left, right

Paste the sun above, tree to the left, flowers to the right of the house. Paste weathervane above, horse to the left of, sheep to the right of barn. See Unit 6 Teacher's Manual.

48 Name

1



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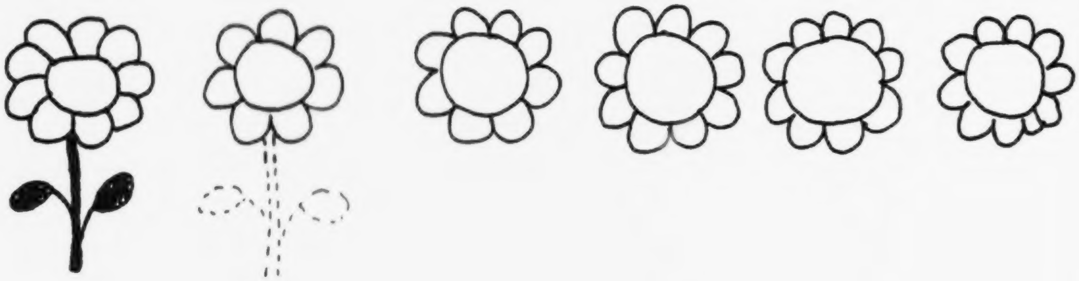

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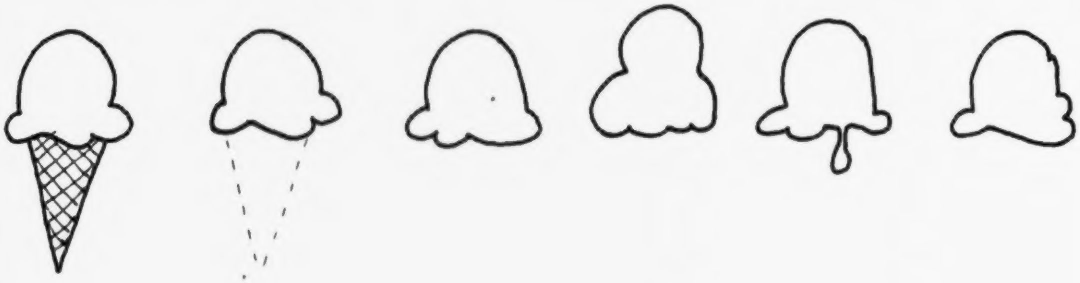

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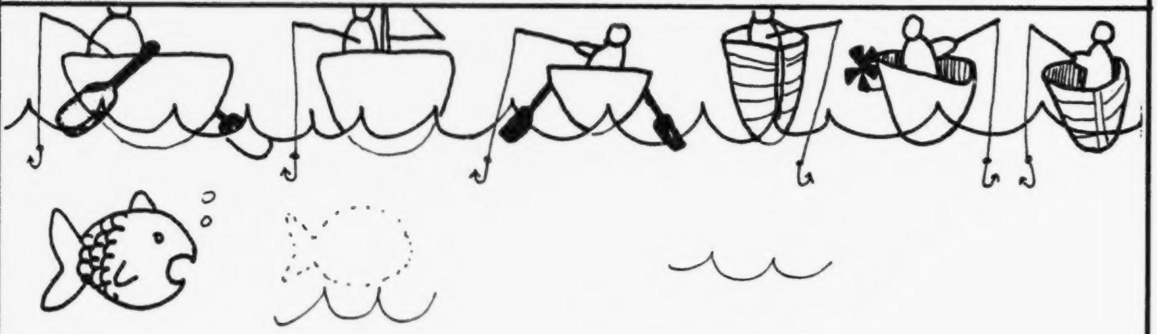
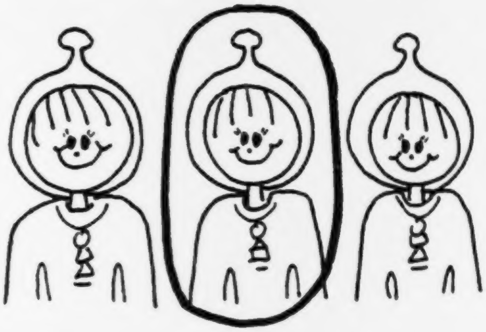
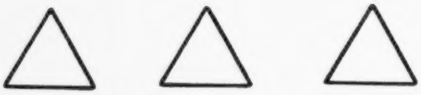
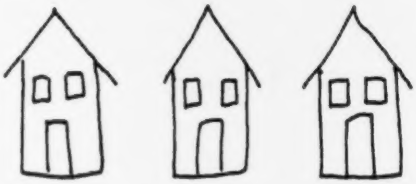
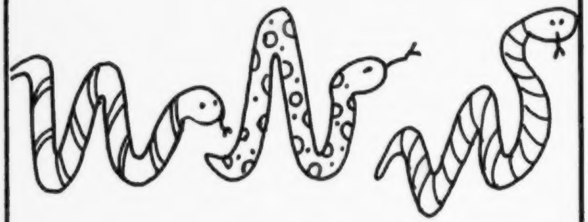
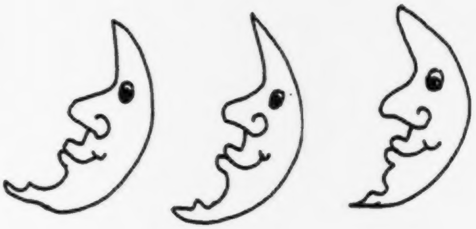
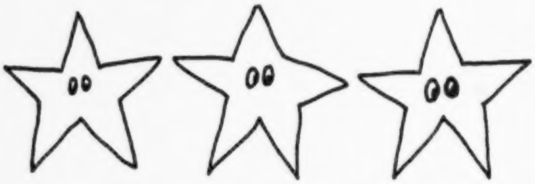
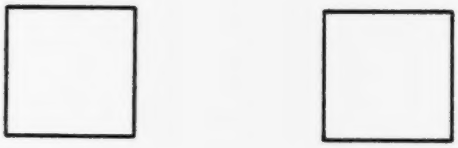
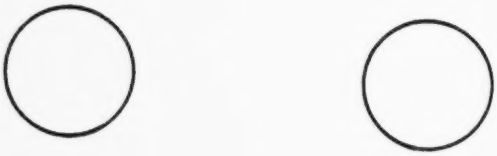


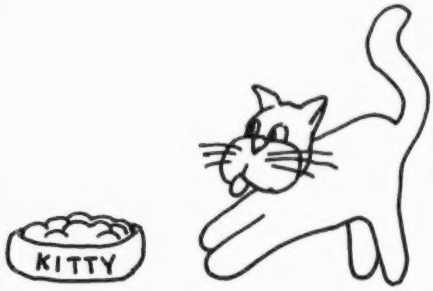
Below Complete drawing objects below as in sample. See Unit 6 Teacher's Manual.

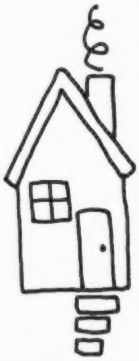
Name ______________________

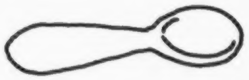
1		
2		
3		
4		

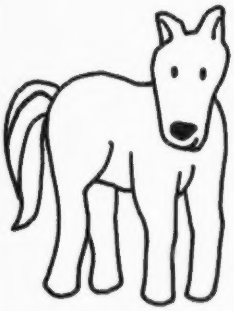
Between Circle and color pictures between in rows 1, 2, 3. Draw a square and a circle to complete sets in row 4. See Unit 6 Teacher's Manual.

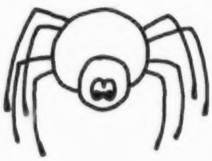
50 Name

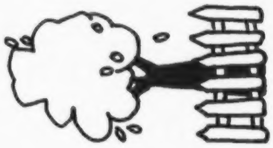


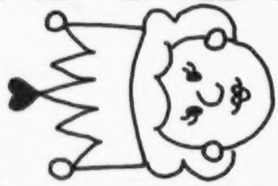


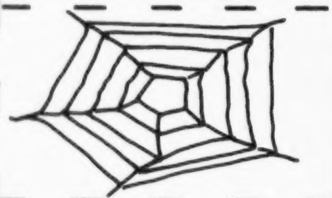


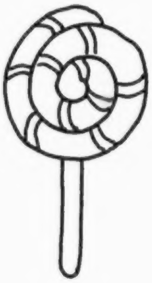


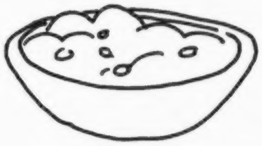


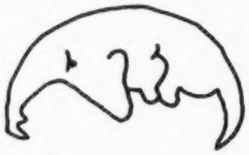


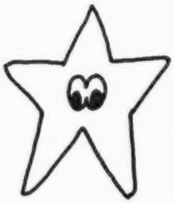


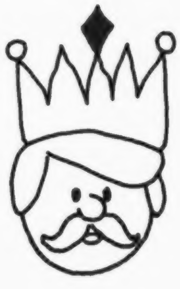


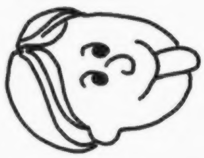


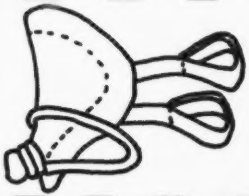








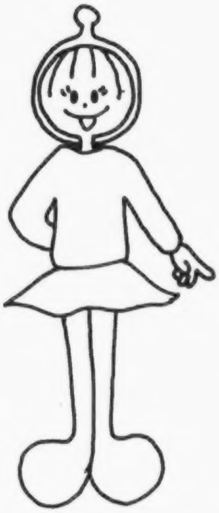


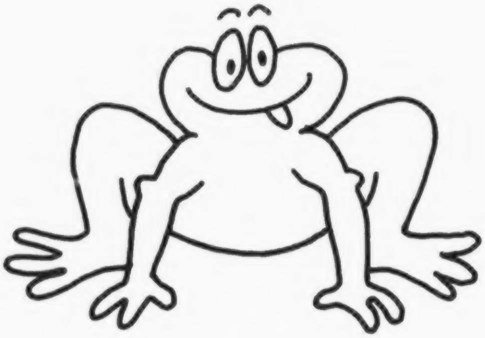


Next to Cut and paste one picture next to each picture. See Unit 6 Teacher's Manual.

Name ______________________

51



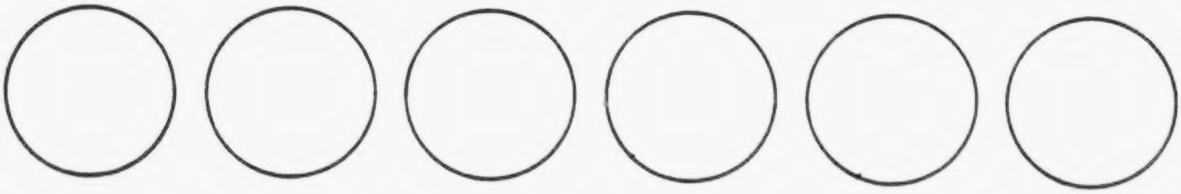


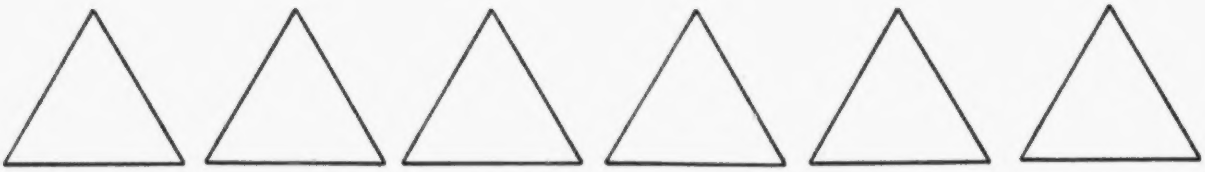
Vocabulary Review

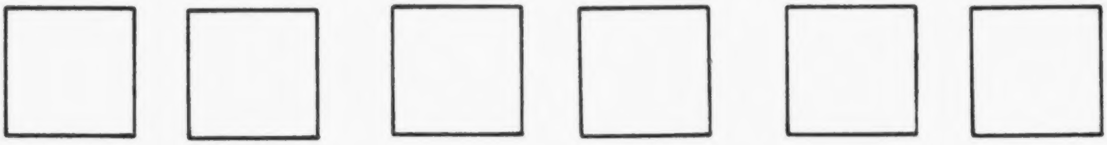
Using appropriate boxes, put X above, below, to left, to right. Draw an insect between frog's feet. Draw a flower next to the frog. See Unit 6 Teacher's Manual.

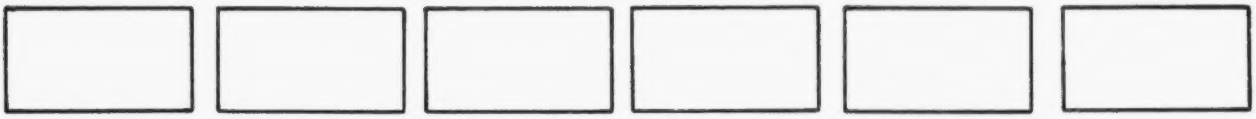
52

Name







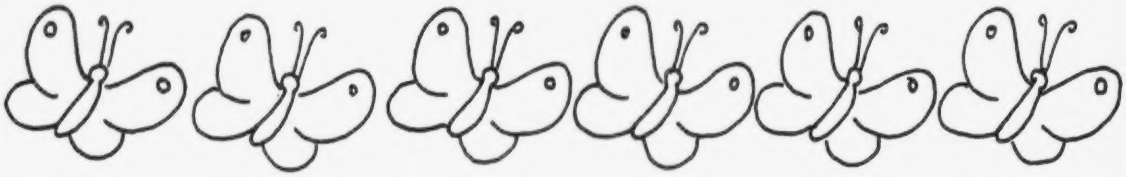


Patterning

Teacher establishes pattern for each row. For example, red, green, red, green. Children complete independently. Important - Sing Astra's Song, discuss Astra and use appropriate Unit 7 activities/poems for all lessons.

Name ______________________

1



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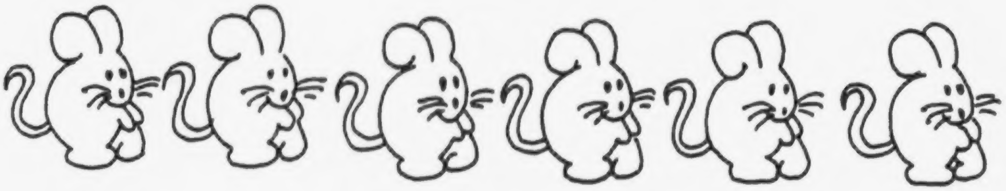

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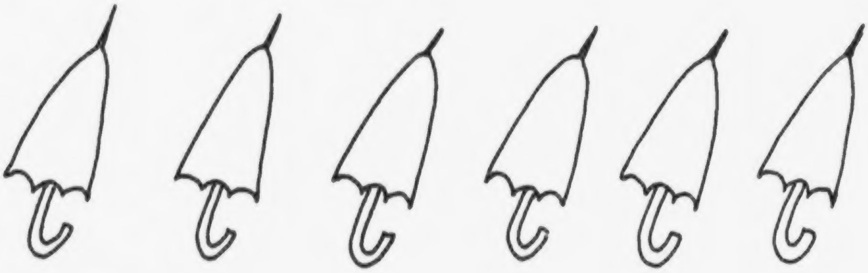

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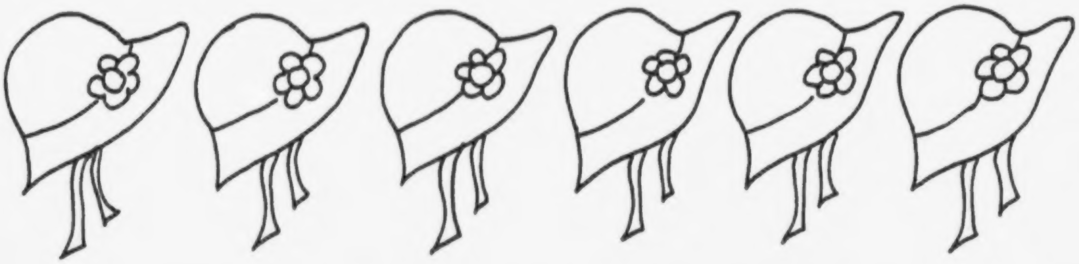
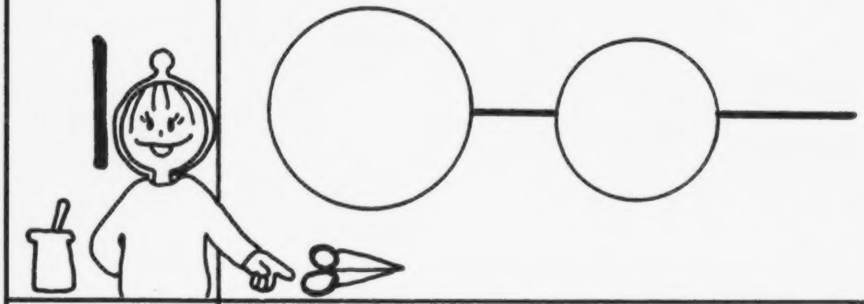


Patterning Teacher establishes pattern for each row. For example, yellow, blue, yellow, blue. Children complete independently. See Unit 7 Teacher's Manual.

54 Name ____________________

_ _ _ _ _ _ _

1



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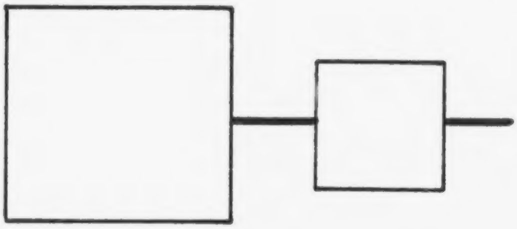

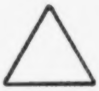

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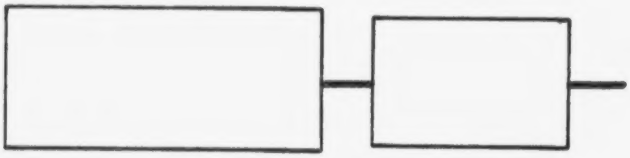

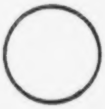

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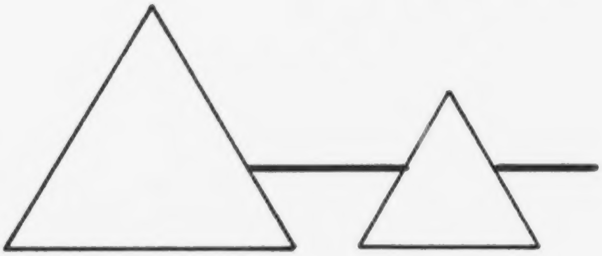
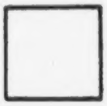
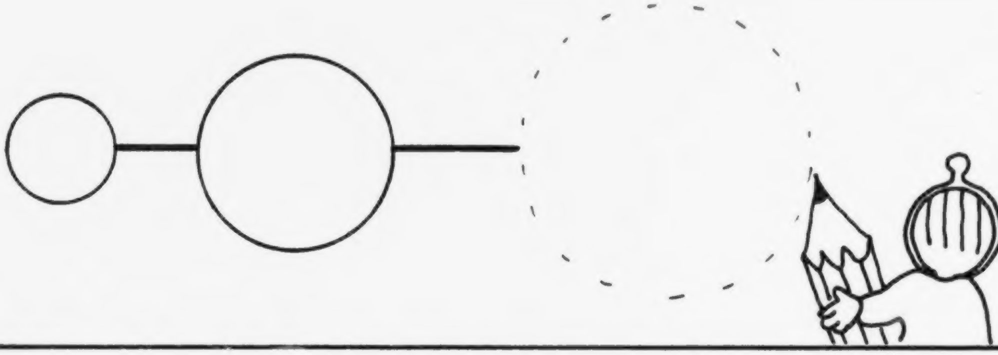




Patterning Cut and paste the smaller geometric shape to correctly complete pattern. See Unit 7 Teacher's Manual.

Name ______________________ **55**

1



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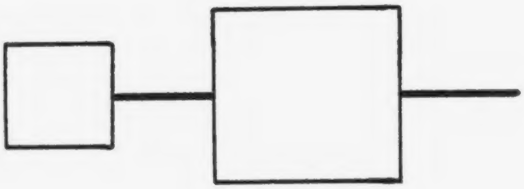

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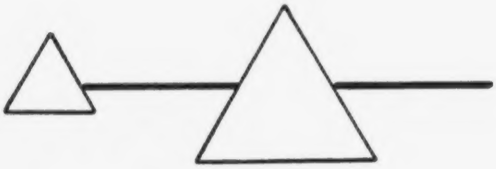

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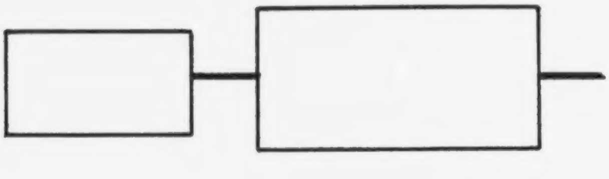
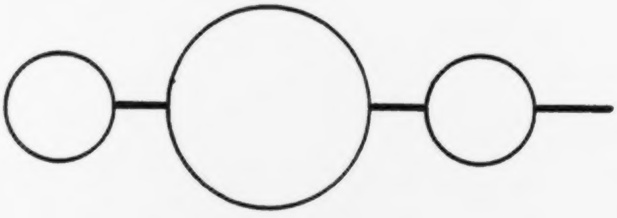
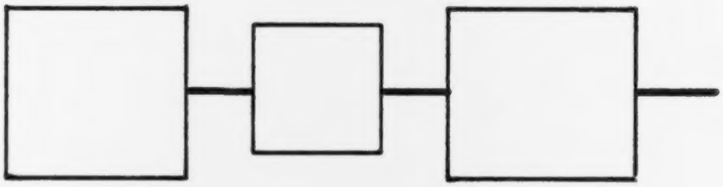
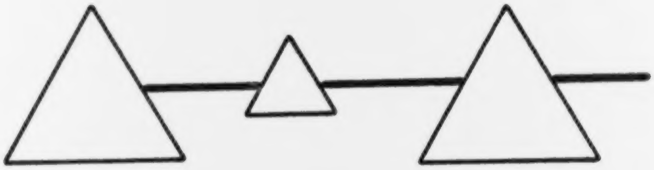
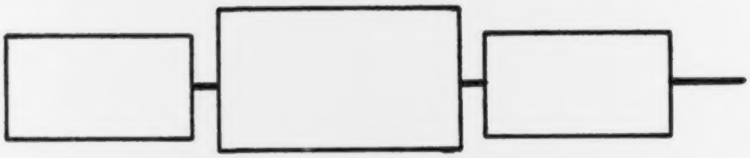


Patterning Have children complete pattern, large or small. See Unit 7 Teacher's Manual.

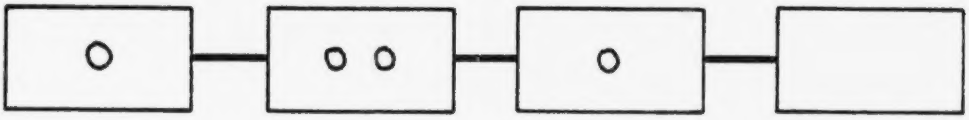
56 Name _ _ _ _ _ _ _

1	
2	
3	
4	

Patterning Children complete pattern, large or small. See Unit 7 Teacher's Manual.

Name

1



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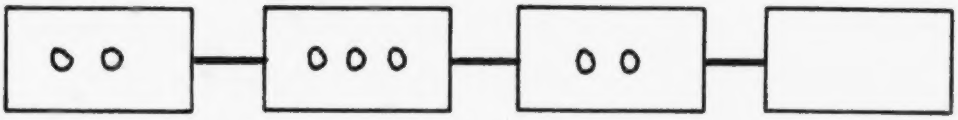

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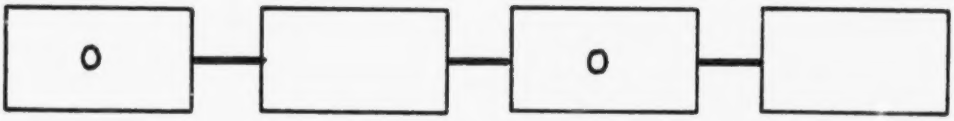

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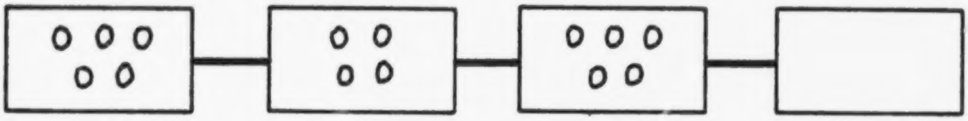

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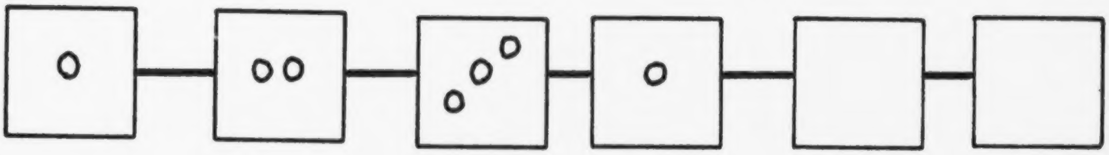
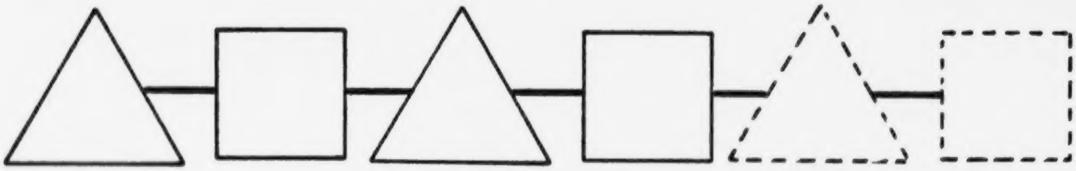


Patterning

Complete pattern of buttonholes on rectangular buttons by drawing correct number of holes. See Unit 7 Teacher's Manual.

58 Name _______________

1



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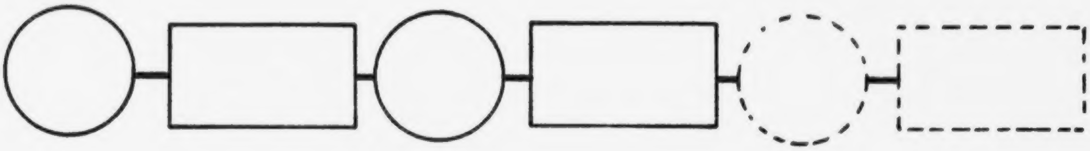

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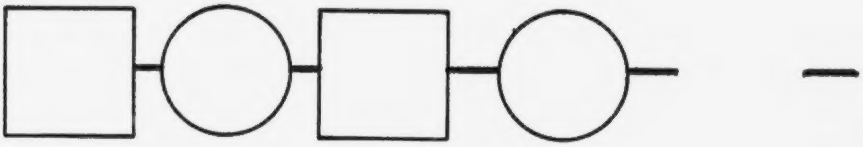

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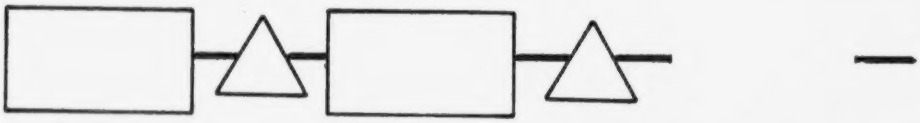

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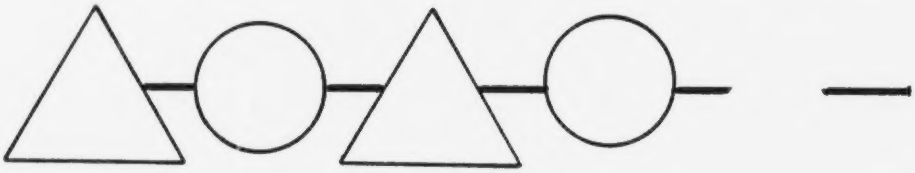
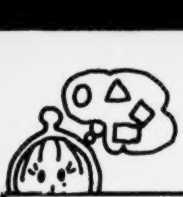
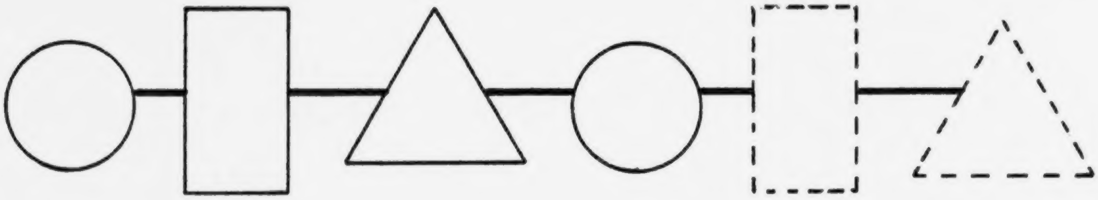


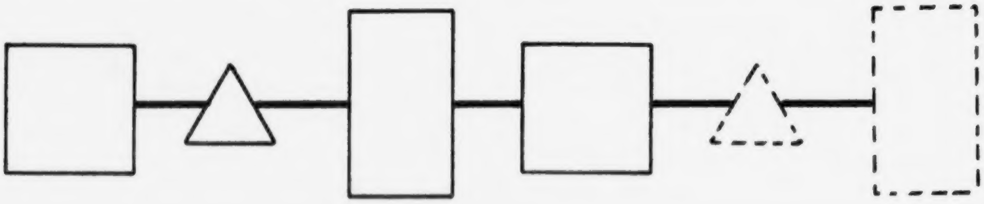
Patterning

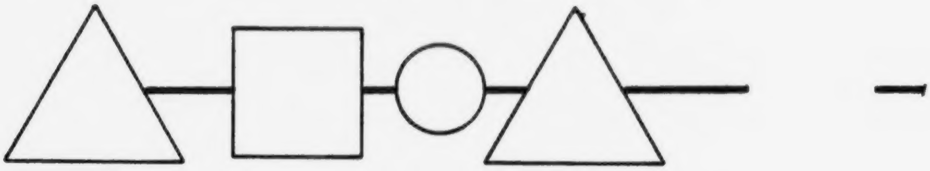
Teacher establishes color pattern for each row. For example - blue △, red □. Children complete independently. See Unit 7 Teacher's Manual.

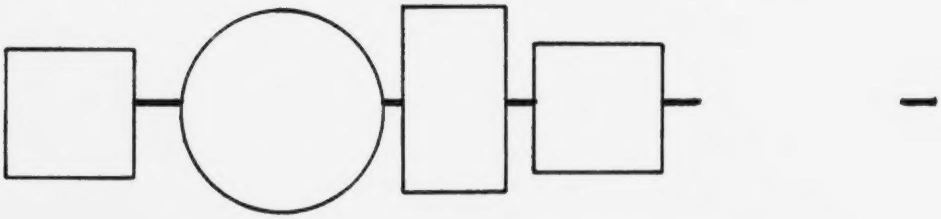


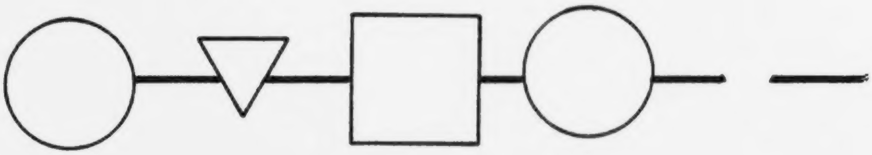
Name ______________________

1 

2 

3 

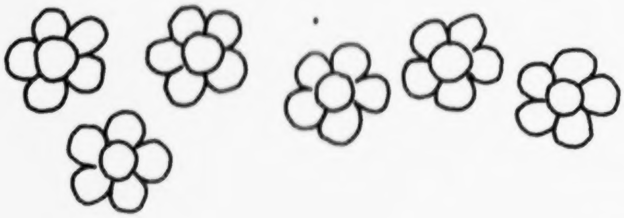
4 

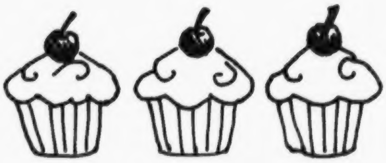
5 

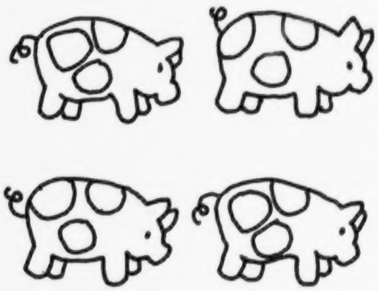
Patterning

Child establishes color pattern for each row. For example - green ○, orange ▯, yellow △. See Unit 7 Teacher's Manual.

60 Name ______________________







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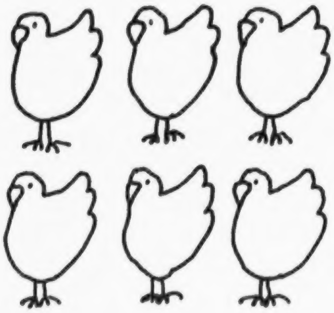
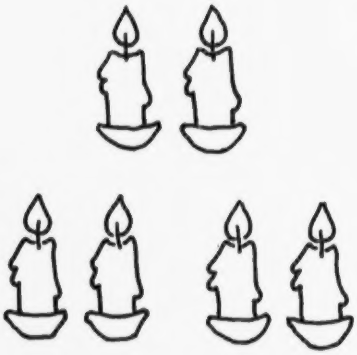
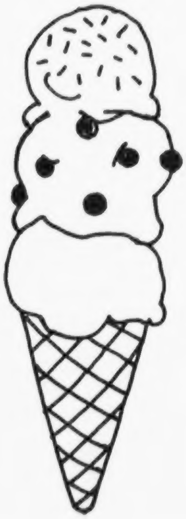
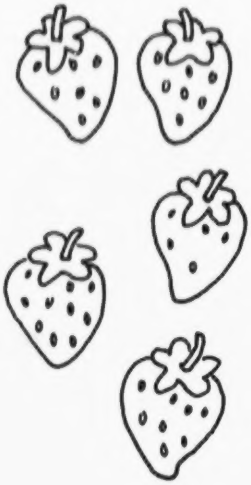




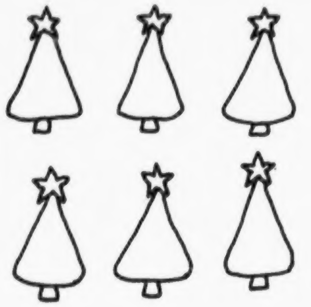


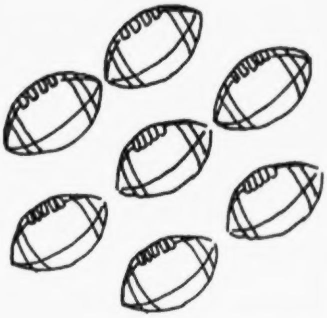


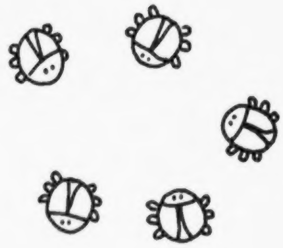
Count objects-6 Locate boxes with objects. Draw lines to number 6. Cut out other boxes. Color boxes with six. Important - Sing Astra's Song, discuss Astra and use appropriate Unit 8 activities/poems for all lessons.

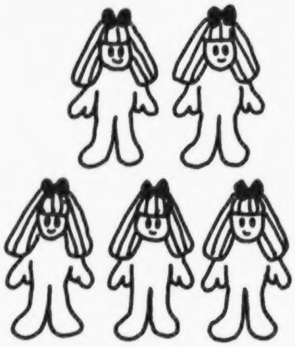
Name ______________________

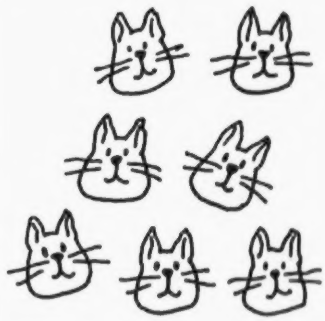
7

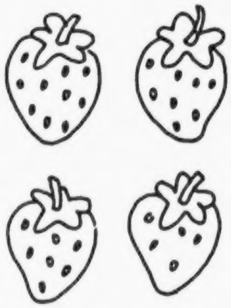












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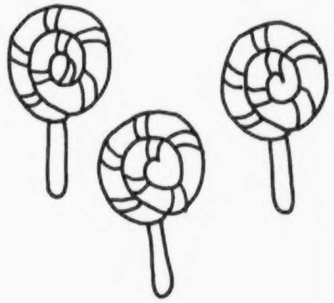

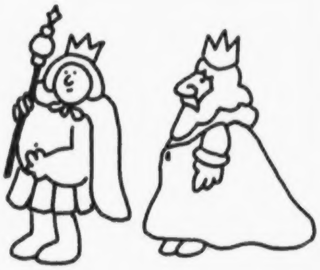

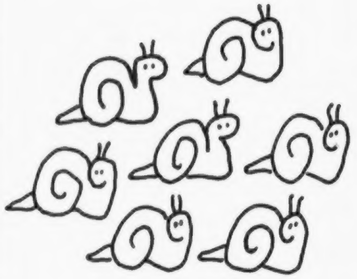

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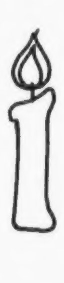
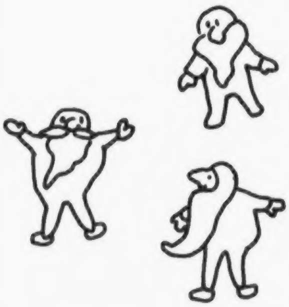
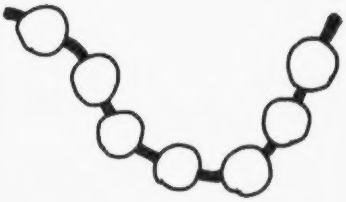


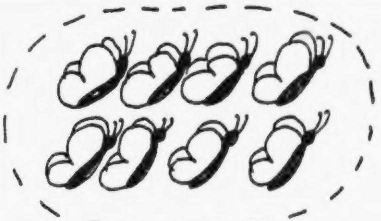




Count sets - 7

Locate groups with 7 pictures. Color group of 7. Cross out other groups. See Unit 8 Teacher's Manual.

62 Name ______________



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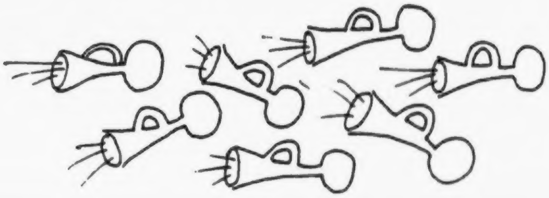

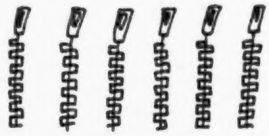

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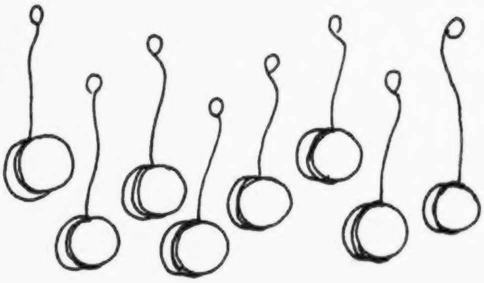

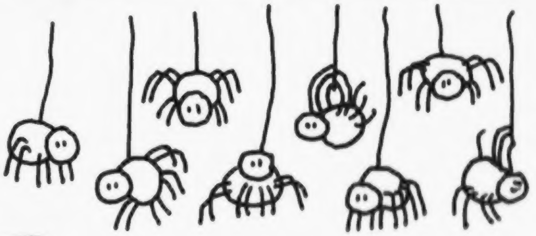

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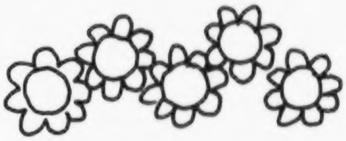

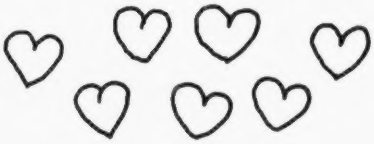

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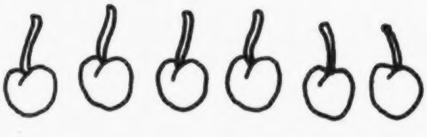

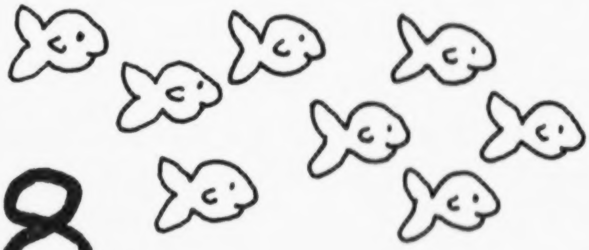

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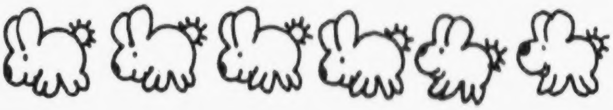

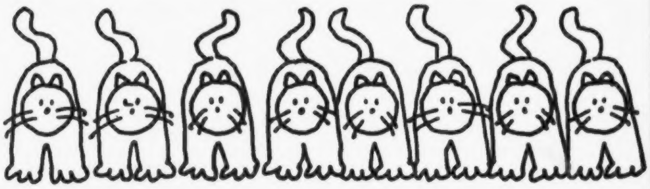

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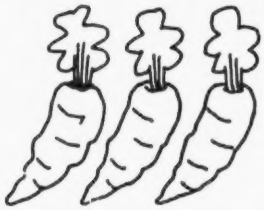
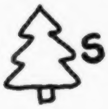
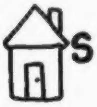


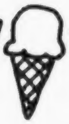
Learn 8

Circle sets of 8. Draw a line from each number 8 to the group of 8 pictures. See Unit 8 Teacher's Manual.

Name ______________________

Draw 6 s

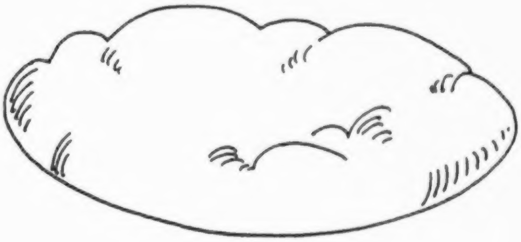
Draw 8 s

Draw 7 s

Review 6,7,8 Draw correct number of trees, houses and ice cream cones. Have each child count number of objects as you correct. See Unit 8 Teacher's Manual.

64 Name ______________________

9-



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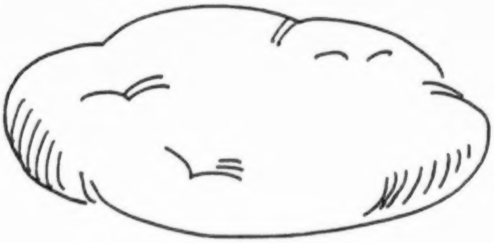
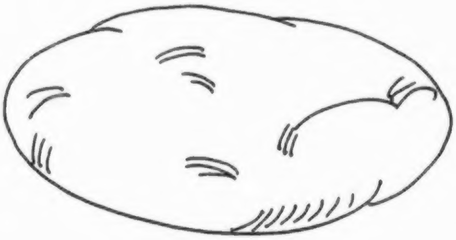


6-



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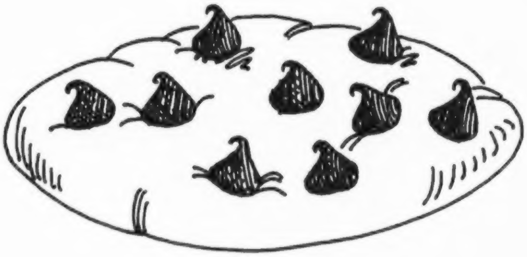

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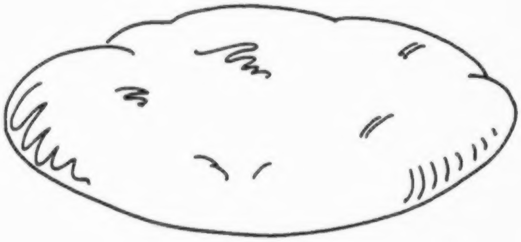

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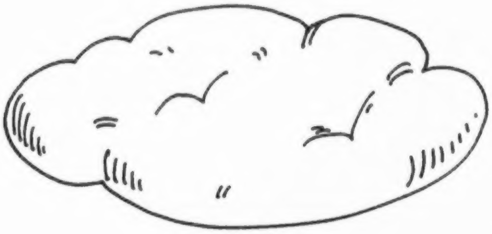

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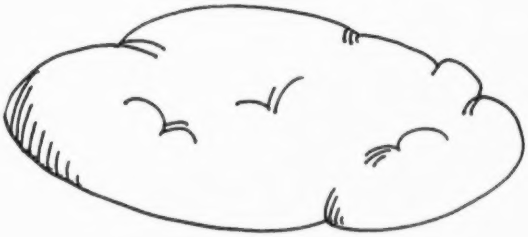
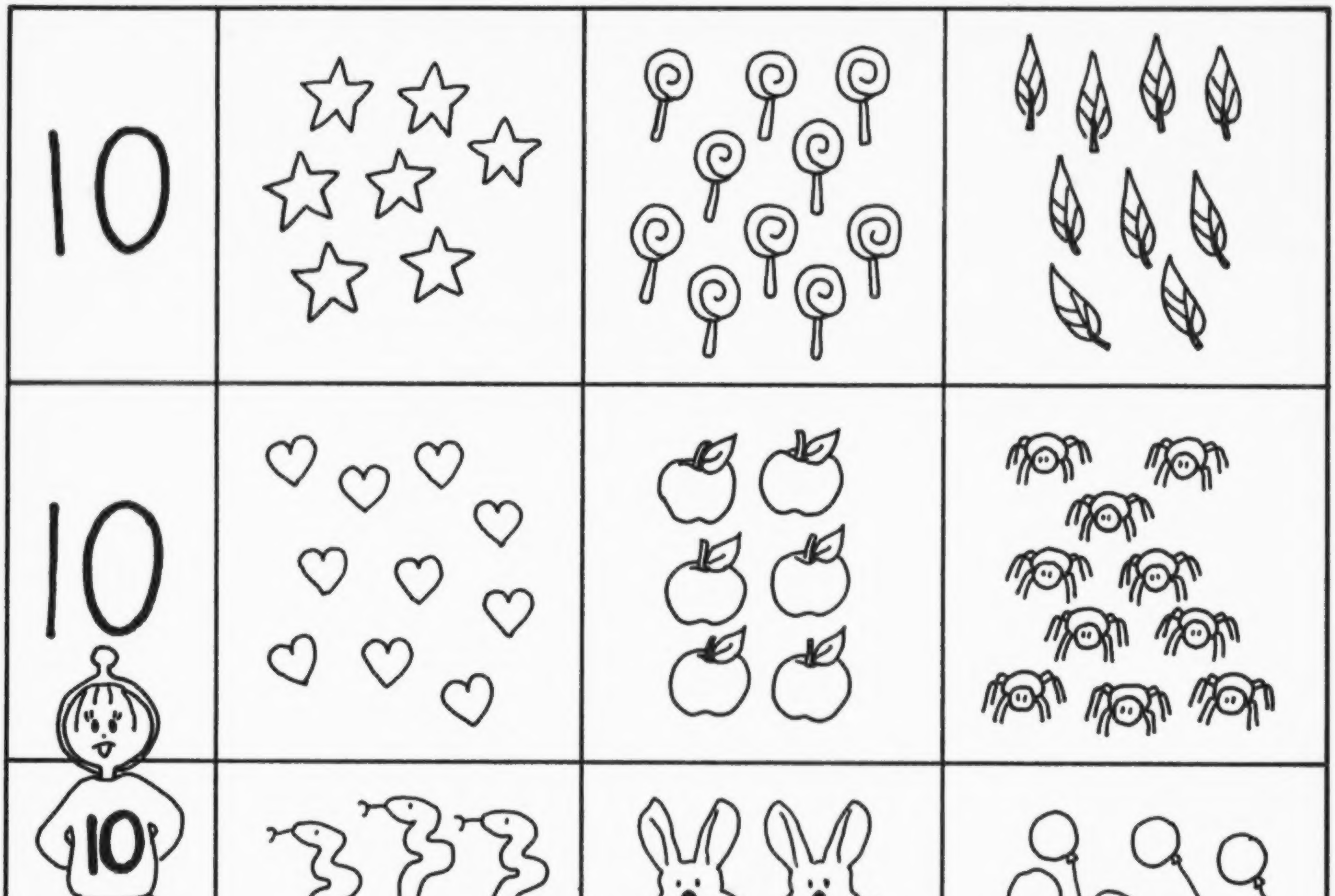


Learn 9 Draw correct number of chocolate chips on each cookie. Circle cookies with 9 chips. See Unit 8 Teacher's Manual.

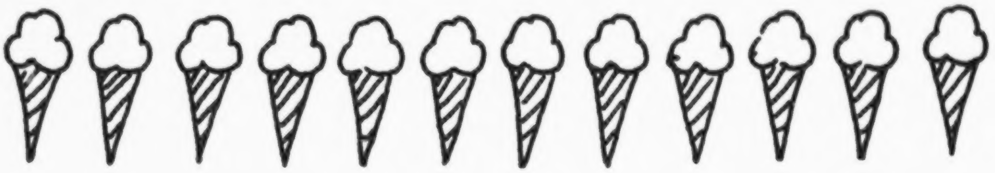
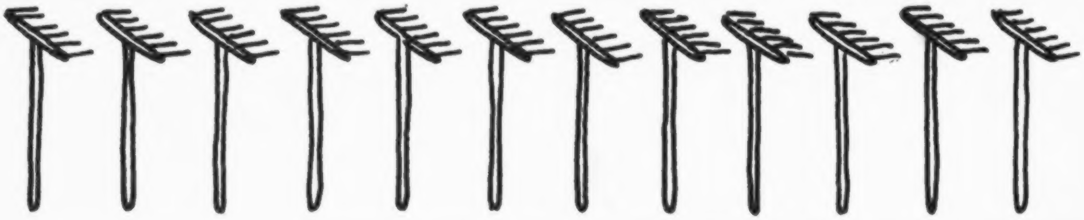
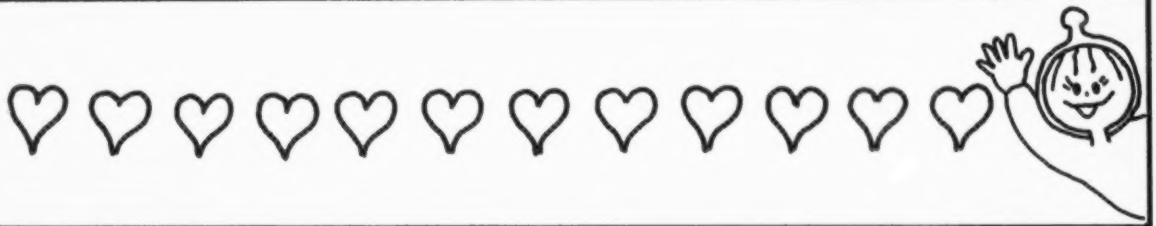
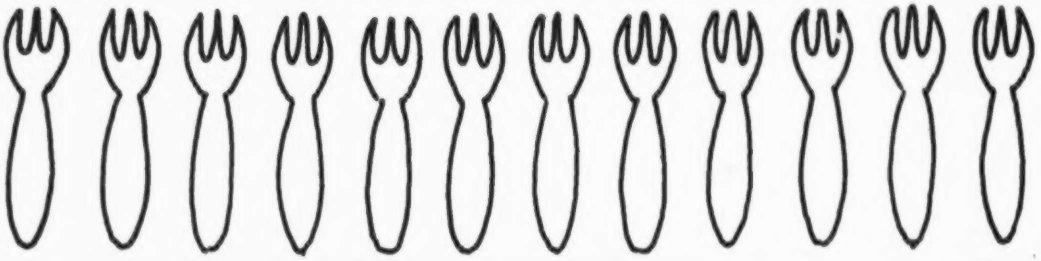
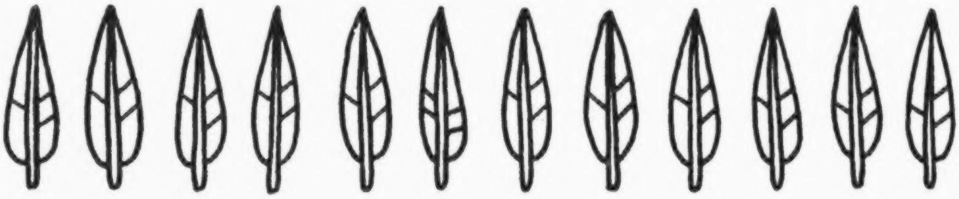
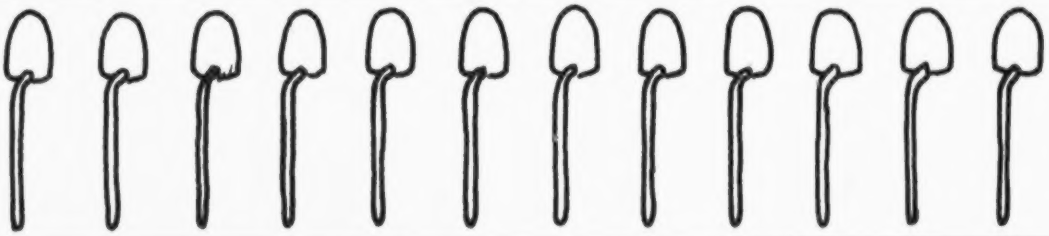
Name ______________________________


10
10
10
10
10

Learn 10 Circle groups of 10. Cross out other groups. See Unit 8 Teacher's Manual.

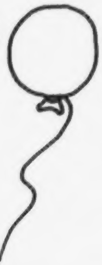
66

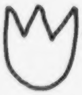
Name ______________________

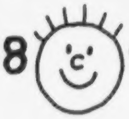
6	
7	
8	
9	
10	
9	

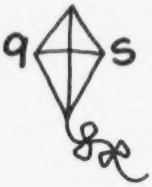
Review Color correct number of feathers in each row. See Unit 8 Teacher's Manual.

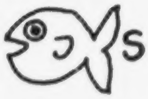
Name ________________________

Draw 6  s

Draw 7  s

Draw 8  s

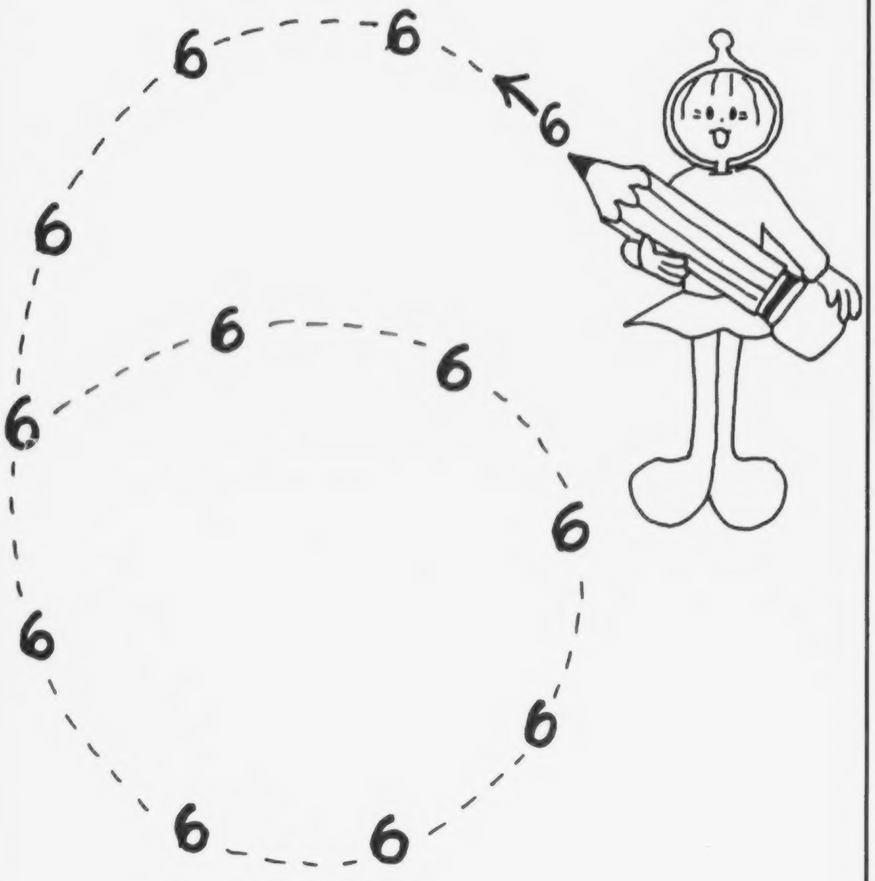
Draw 9  s

Draw 10  s

Number Review On top of page, draw correct number of designated objects. On bottom of page, draw correct number of any objects. Encourage creativity. See Unit 8 Teacher's Manual.

Name

68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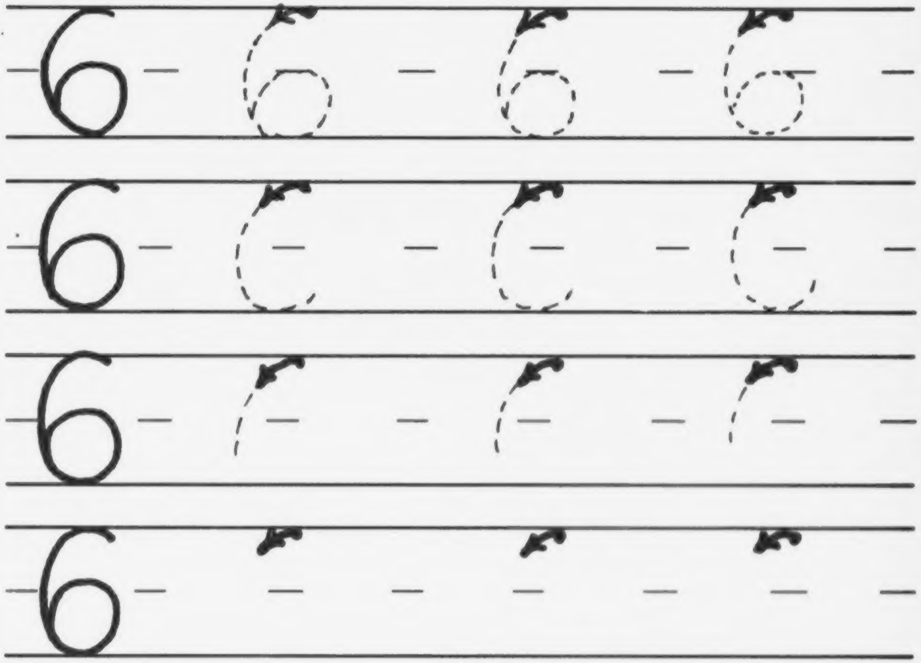
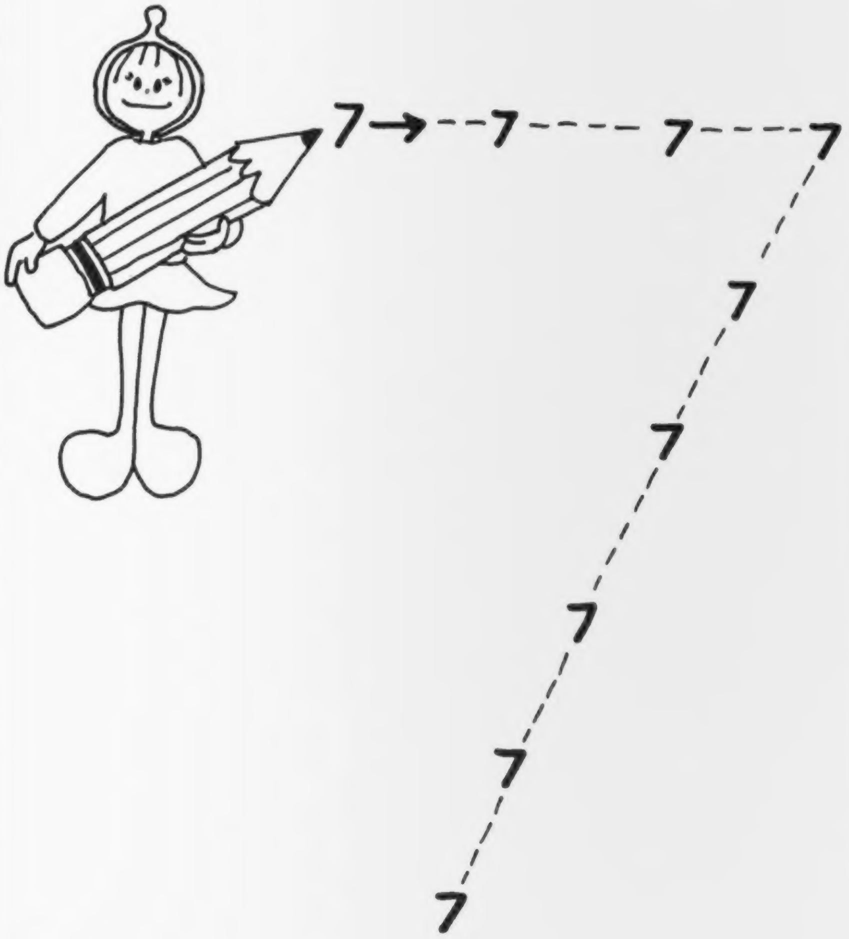
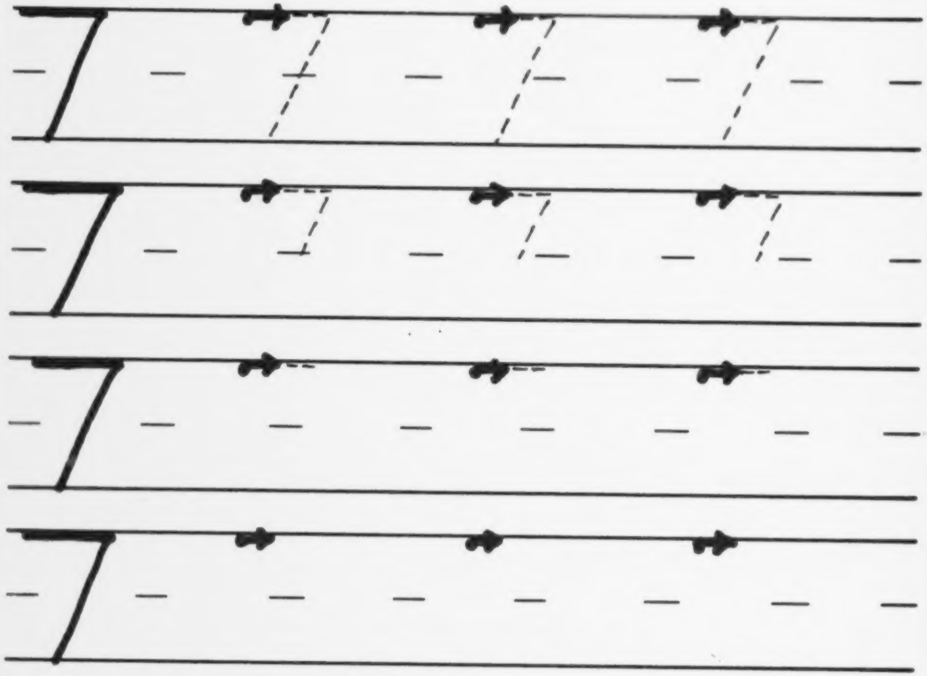


Writing 6

Recite 6 poem. Trace all 6's. Draw 6 objects in box. Important - Sing Astra's Song, discuss Astra and use appropriate Unit 9 activities following all lessons.

69 **Name** ______________________

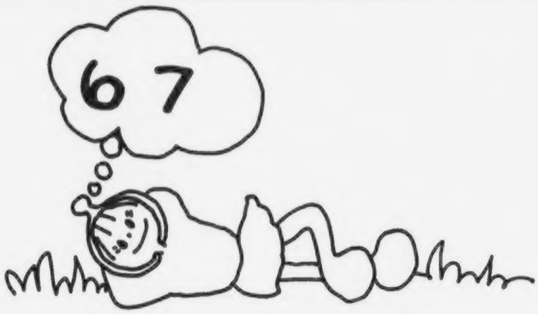


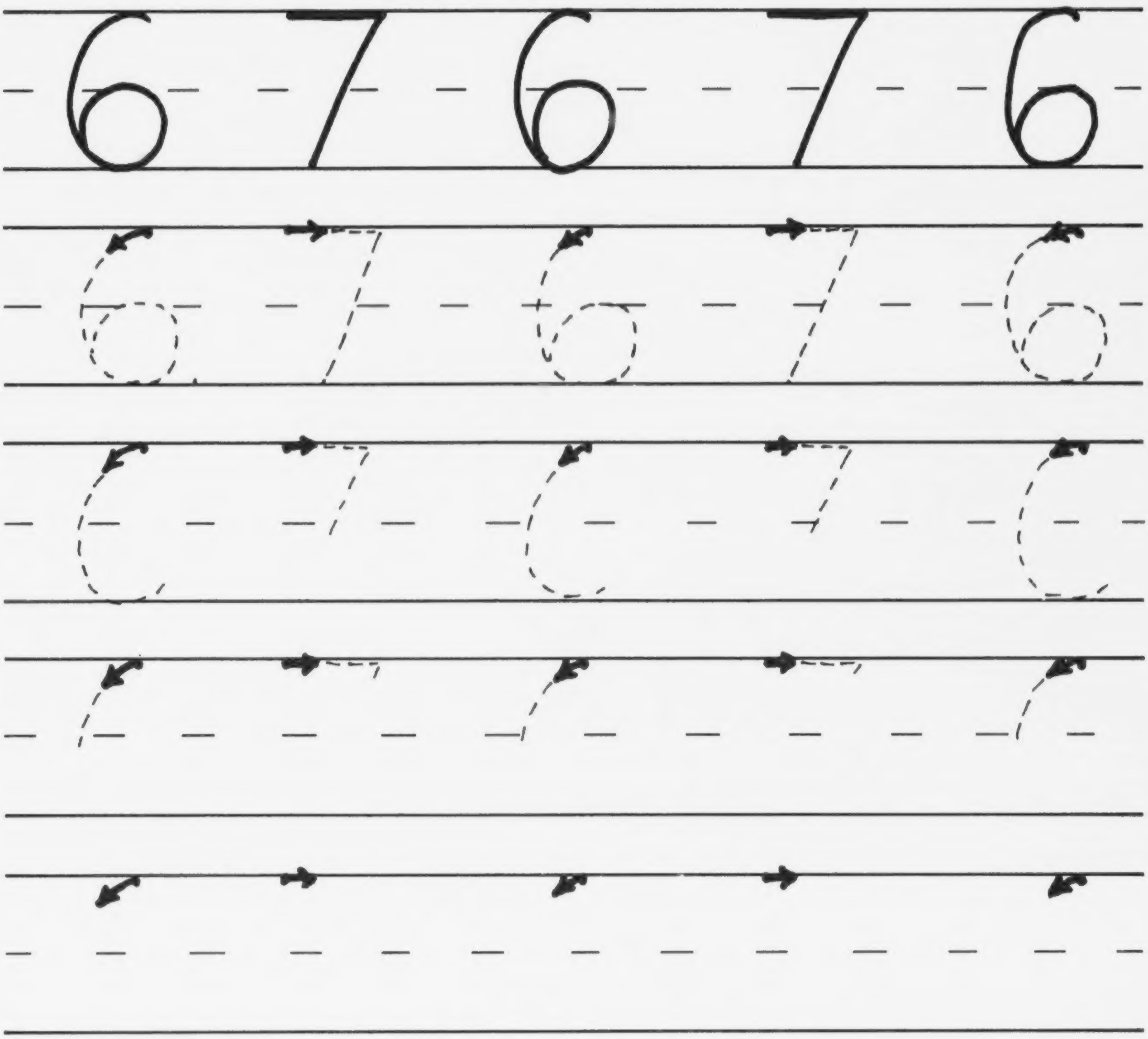


Writing 7

Recite 7 poem. Trace and write all 7's. Draw 7 objects in box. See Unit 9 Teacher's Manual.

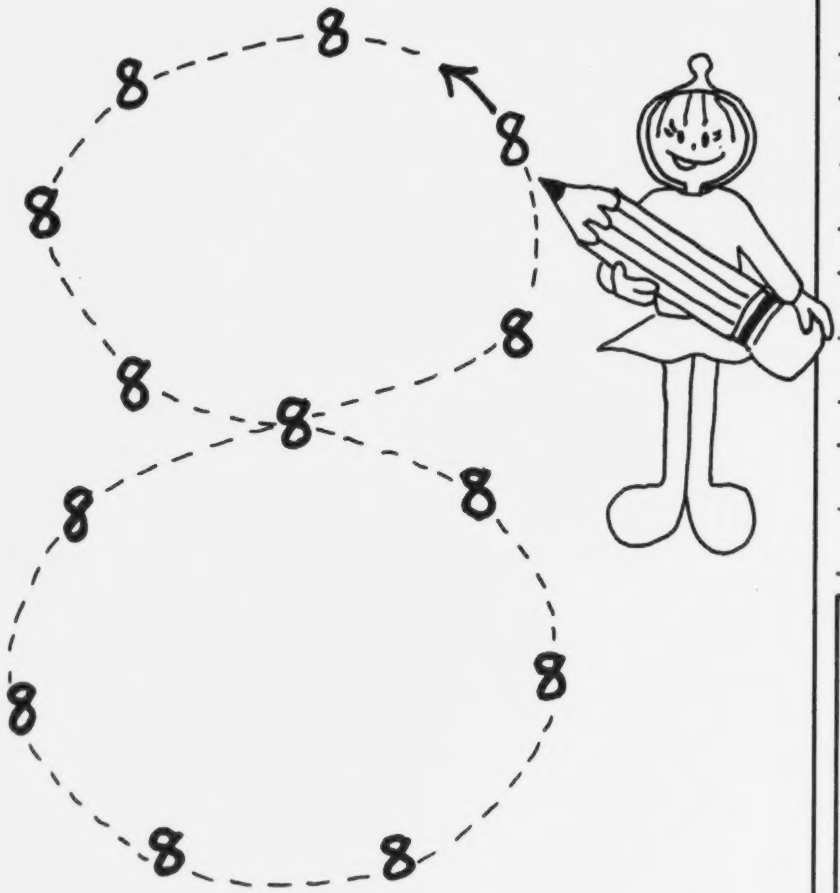
70 Name ______________________________

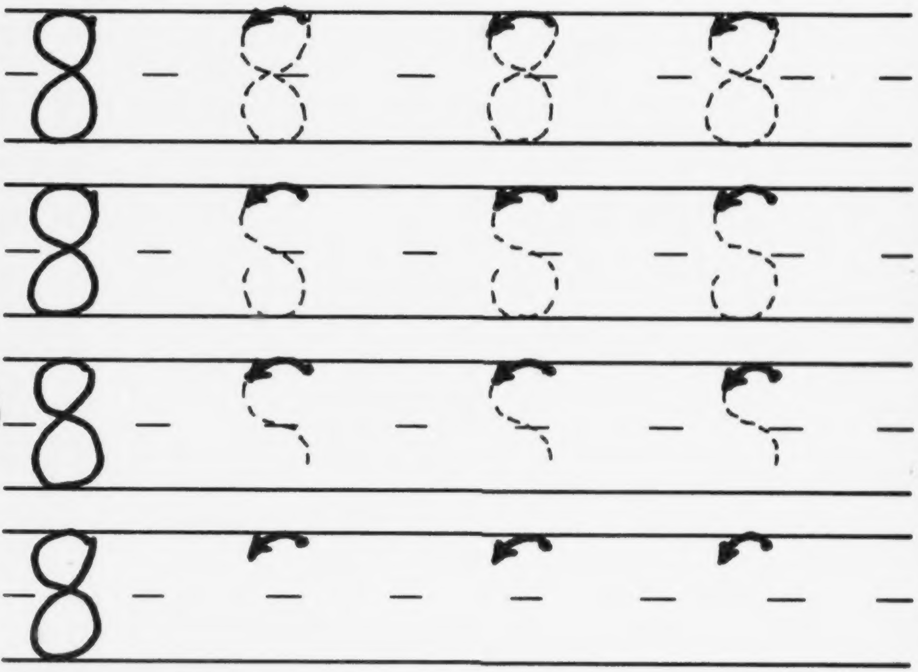




Review 6,7 Recite 6 and 7 poems. Trace and write 6's and 7's. Review patterning. See Unit 9 Teacher's Manual.

71 Name



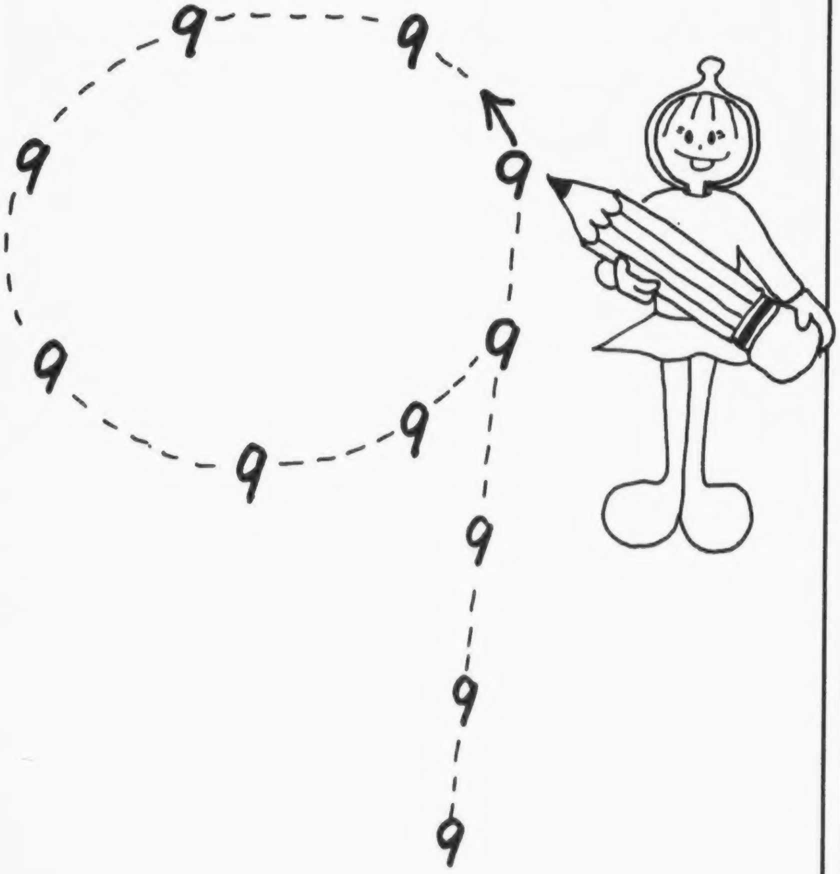


Writing 8

Recite 8 poem. Trace and write all 8's. Draw 8 objects in box. See Unit 9 Teacher's Manual.

Name

72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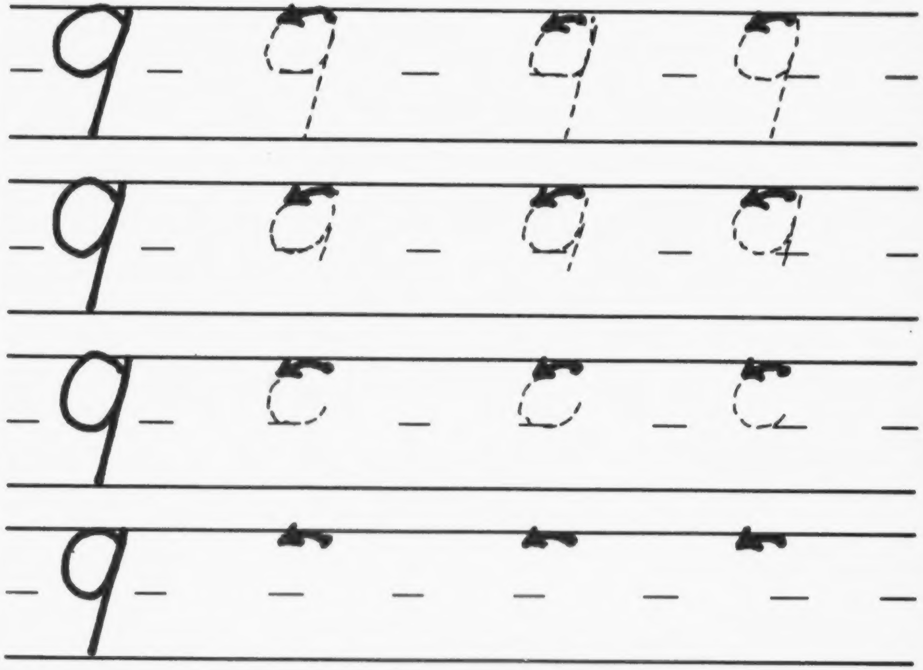
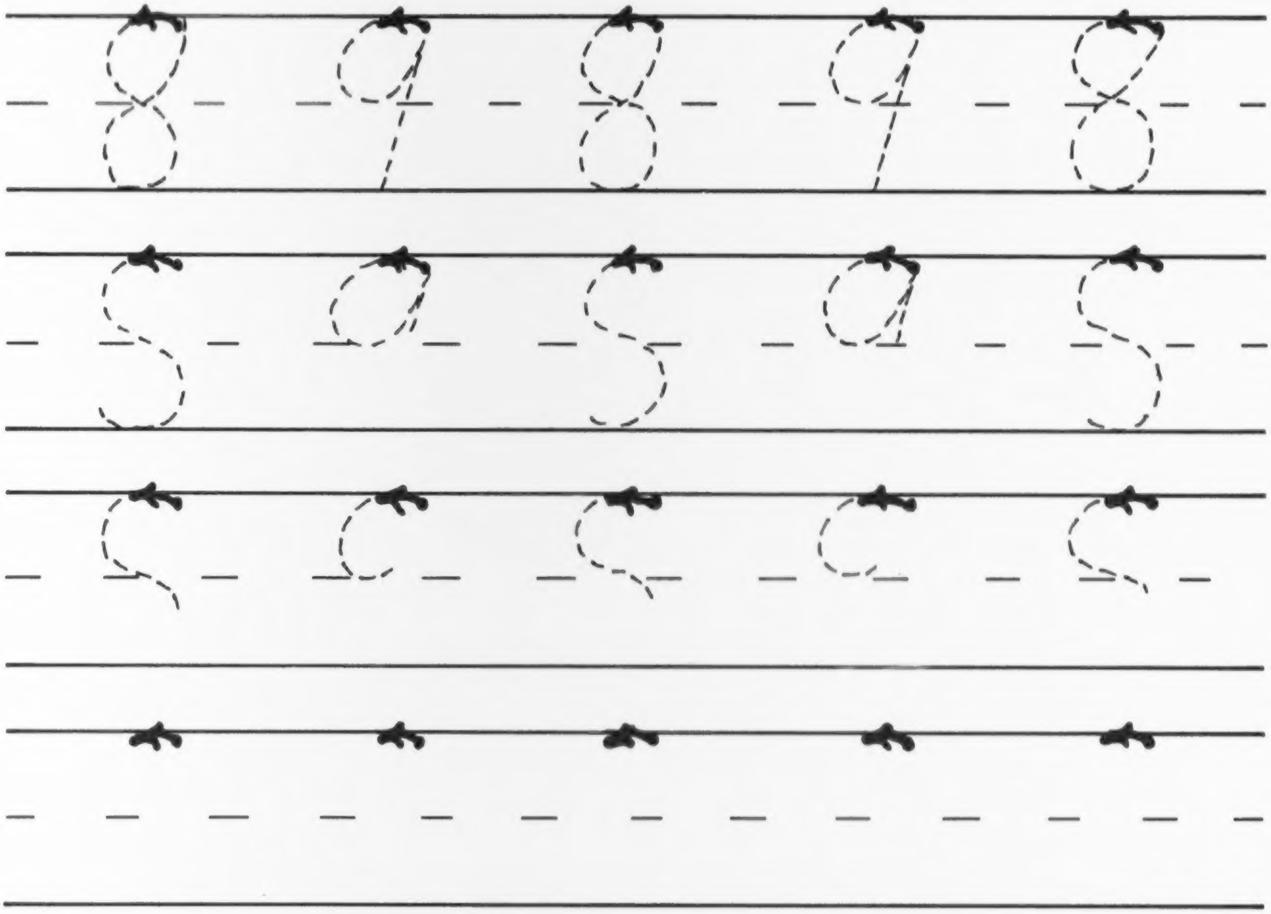


Writing 9

Recite 9 poem. Trace and write all 9's. Draw 9 objects in box. See Unit 9 Teacher's Manual.

Name ______________________________

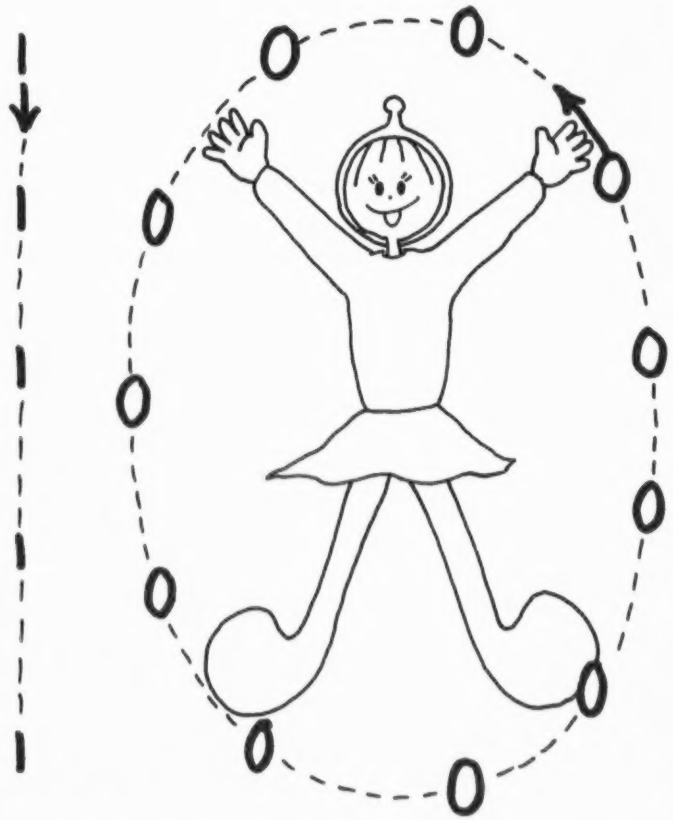
8 9 8 9 8

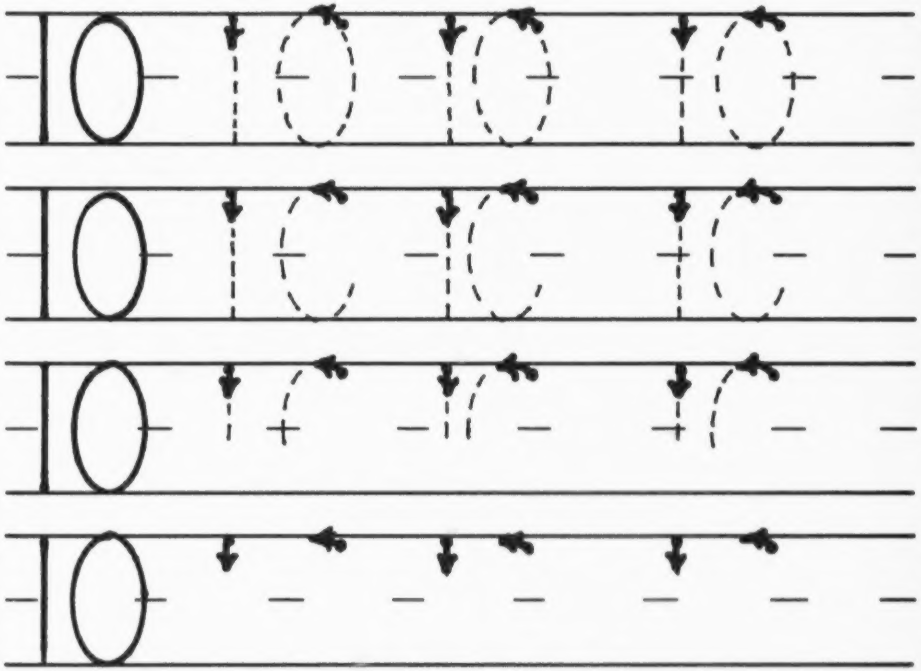


Review 8,9

Recite 8 and 9 poems. Trace and write 8's and 9's. Review patterning. See Unit 9 Teacher's Manual.

Name

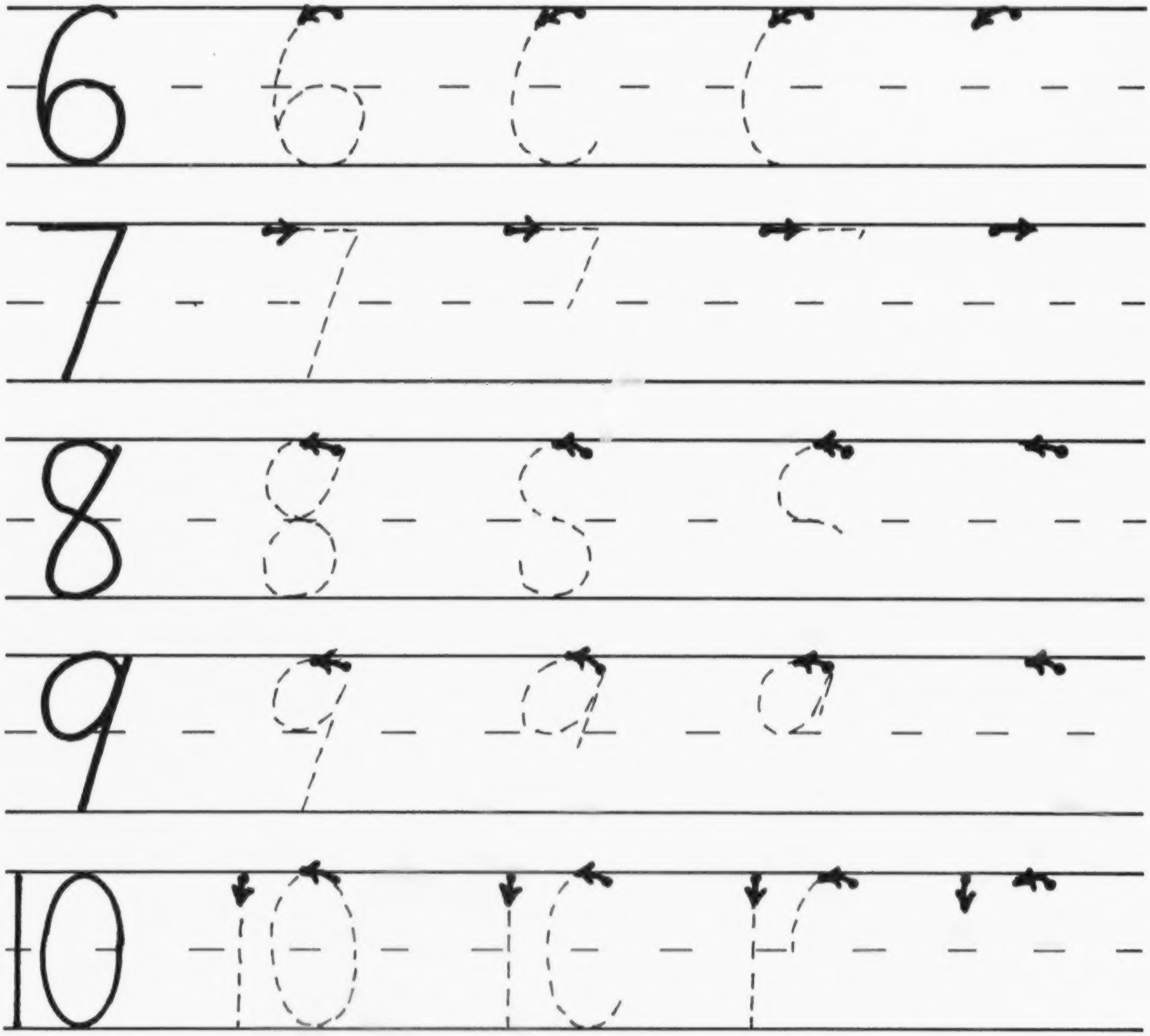


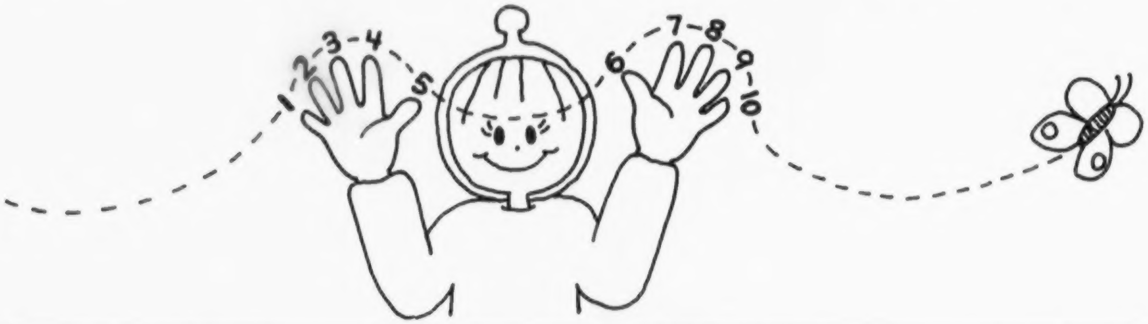


Writing 10

Recite 10 poem. Trace and write all 10's. Draw 10 objects in box. See Unit 9 Teacher's Manual.

Name ______________________

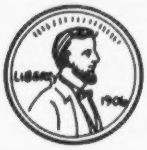



1-2-3-4-5
6-7-8-9-10

Review 6,7,8,9,10

Recite number poems for 6, 7, 8, 9, and 10. See Unit 9 Teacher's

76 Name ______________________



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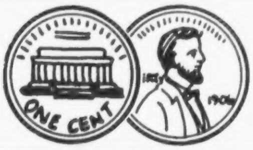

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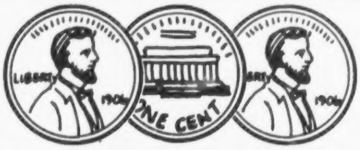

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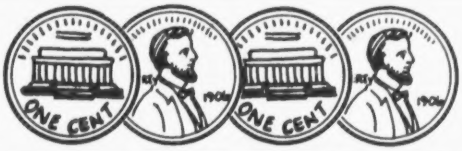

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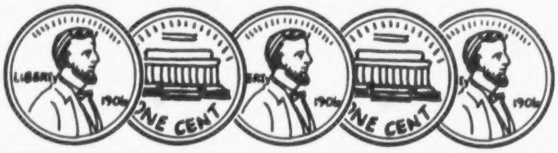

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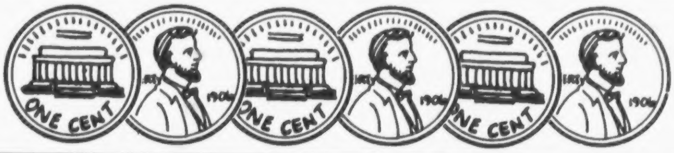

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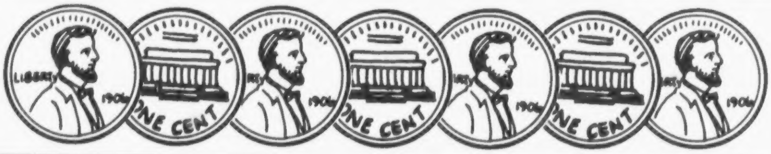

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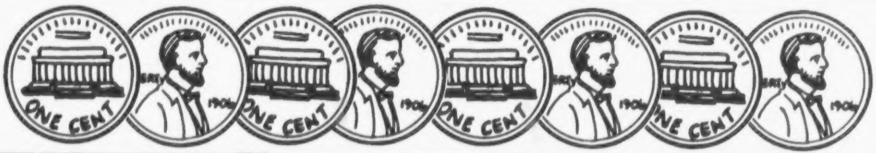

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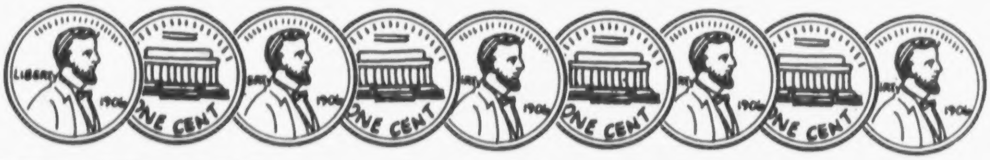
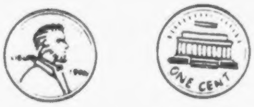


______¢

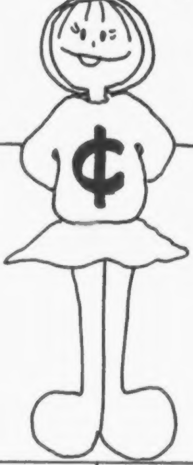
Penny Count pennies. Write correct amount. Stress ¢ sign. Important - Sing Astra's Song. Discuss Astra and use appropriate Unit 10 activities following all lessons.

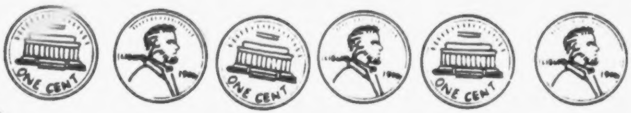
Name ______________________

77

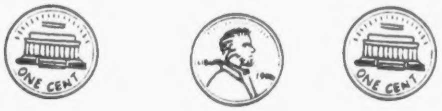


1¢ 2¢ 3¢

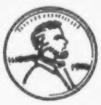




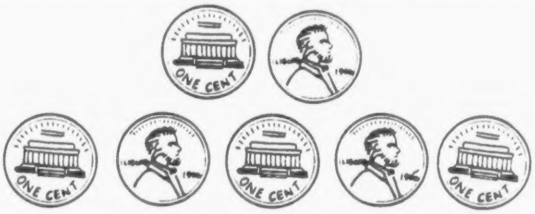
4¢ 5¢ 6¢



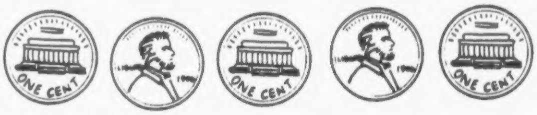
2¢ 3¢ 4¢



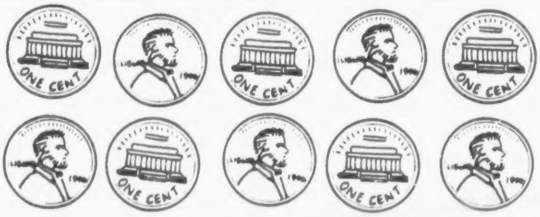
1¢ 2¢ 3¢



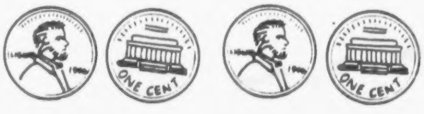
6¢ 7¢ 8¢



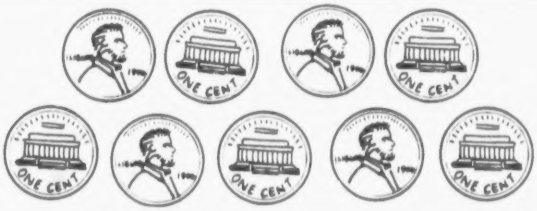
3¢ 4¢ 5¢



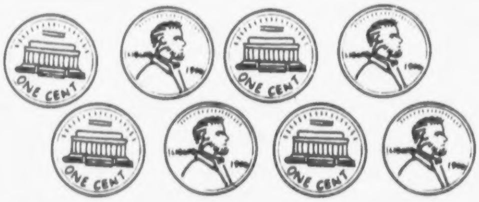
8¢ 9¢ 10¢



3¢ 4¢ 5¢



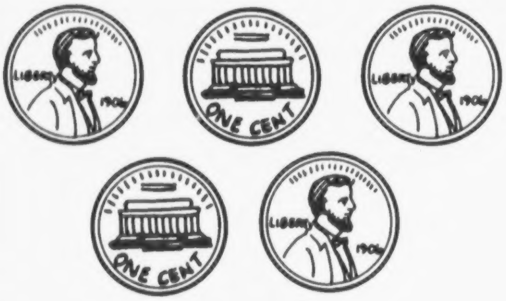
7¢ 8¢ 9¢



8¢ 9¢ 10¢

Penny Review ¢ sign. Count coins. Circle correct amount. See Unit 10 Teacher's Manual.

78 Name ______________________



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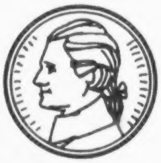

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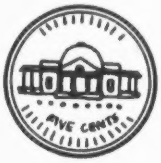

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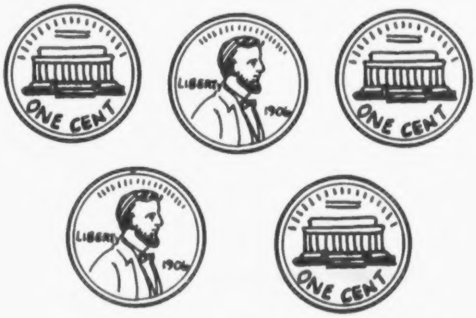
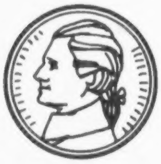
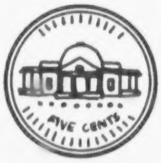


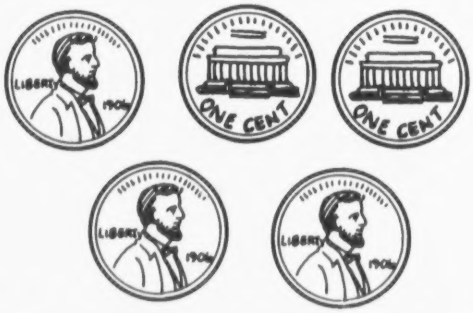
2¢ 5¢ 4¢



5¢ 3¢ 4¢



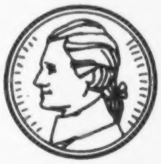
1¢ 5¢ 2¢



4¢ 5¢ 2¢

Nickel Discuss top of page. Circle correct number. See Unit 10 Teacher's Manual.

Name ______________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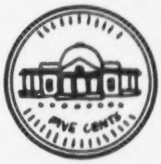
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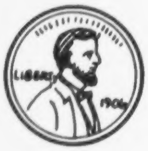
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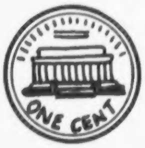
1¢

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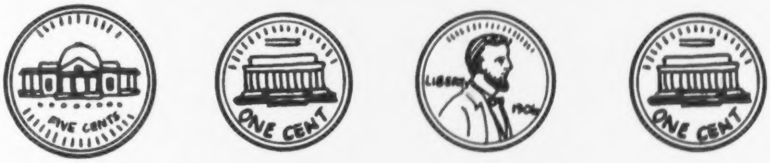

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8¢ 4¢

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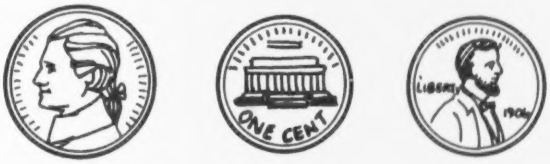
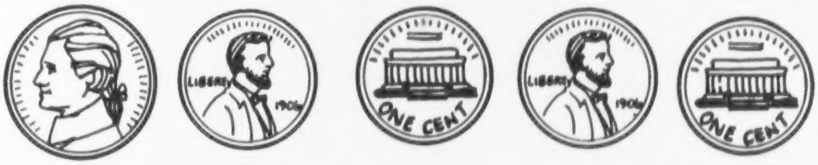


____¢ ____¢ ____¢

3¢ 7¢

3



____¢ ____¢ ____¢ ____¢ ____¢

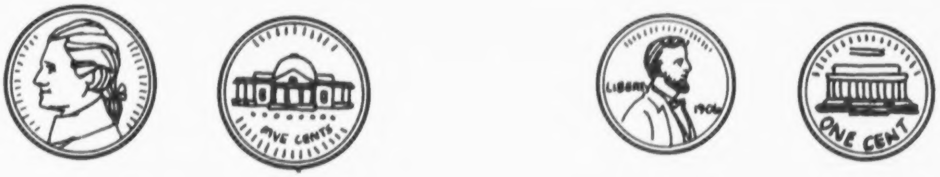
9¢ 5¢

Coins

Count coins. Circle correct number. See Unit 10 Teacher's Manual.

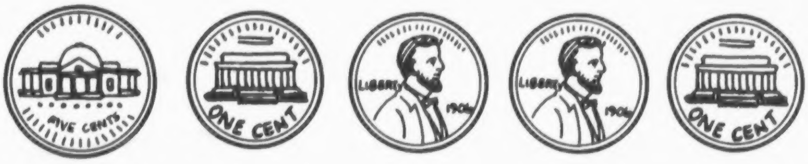
80

Name ______________________



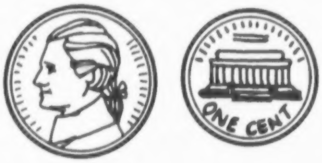
5¢ 5¢ 1¢ 1¢

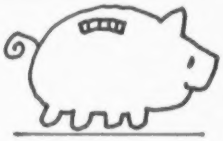
1



____ ¢

2





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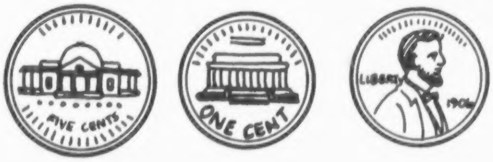
3



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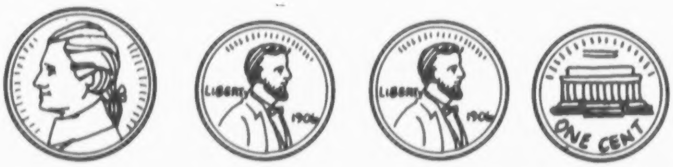
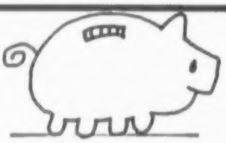
4



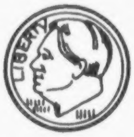


____ ¢

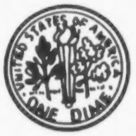
Coins

Count coins. Write value of coins. See Unit 10 Teacher's Manual.

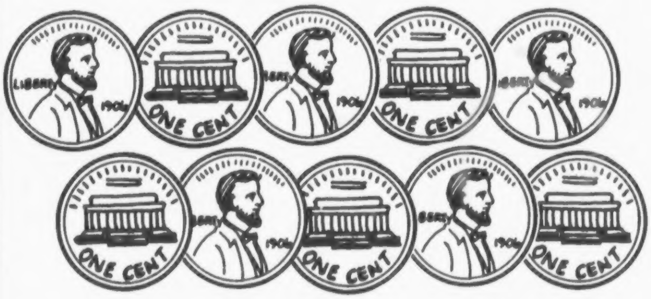
Name ______________________



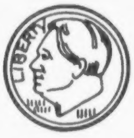
10¢



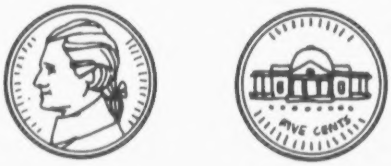
10¢



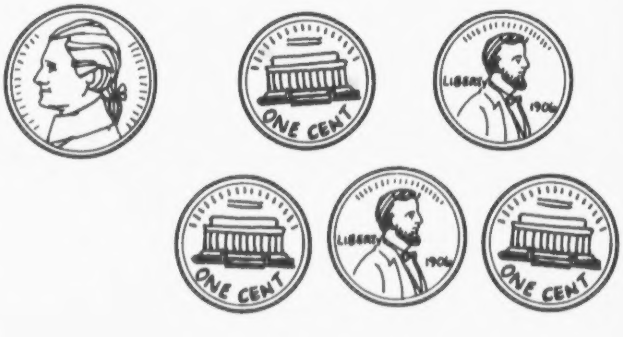
8¢ 9¢ 10¢



7¢ 9¢ 10¢



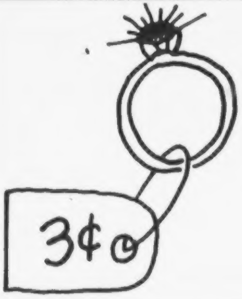
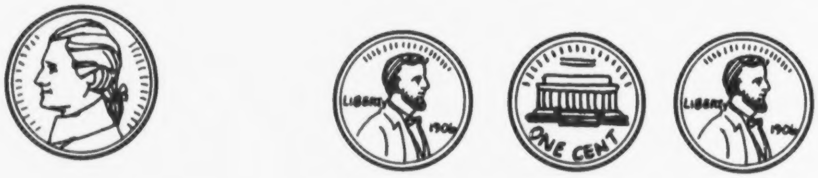
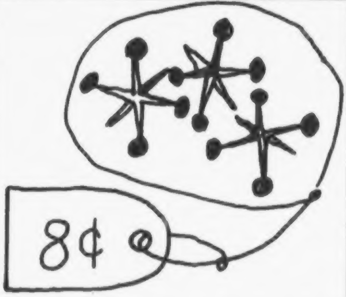
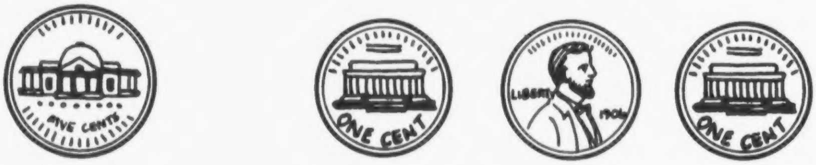
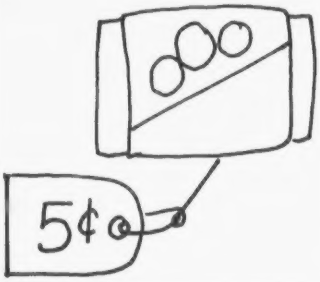
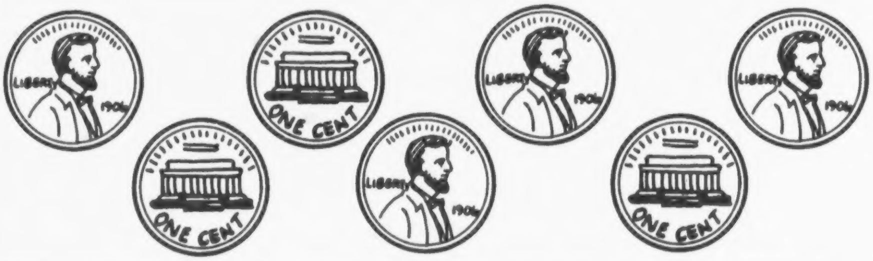
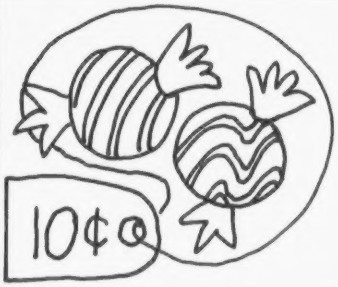
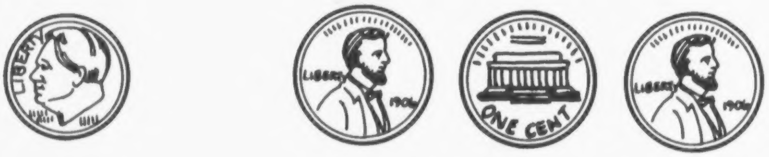
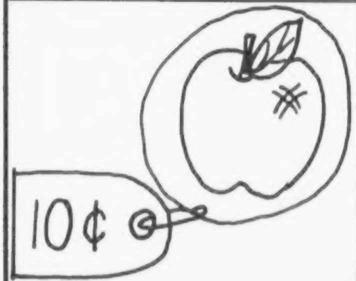
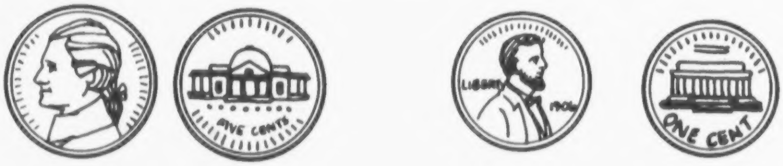
10¢ 6¢ 7¢



10¢ 9¢ 8¢

Dimes Discuss top of page. Circle correct numbers. See Unit 10 Teacher's Manual.

82 Name

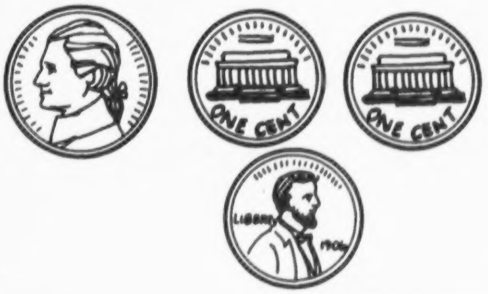
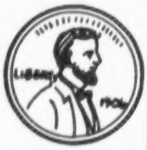
	 LIBERTY ONE CENT
	 FIVE CENTS ONE CENT LIBERTY
	 LIBERTY ONE CENT
	 LIBERTY ONE CENT
	 FIVE CENTS LIBERTY ONE CENT

Dimes

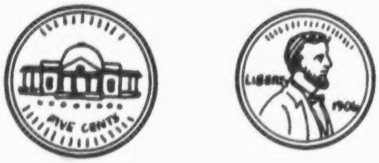
Read price tags. Have children circle correct coins for each tag. Answers may vary. See Unit 10 Teacher's Manual.

Name ________________________________

83



LIBERTY
1906

_____ ¢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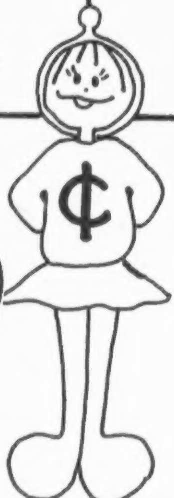
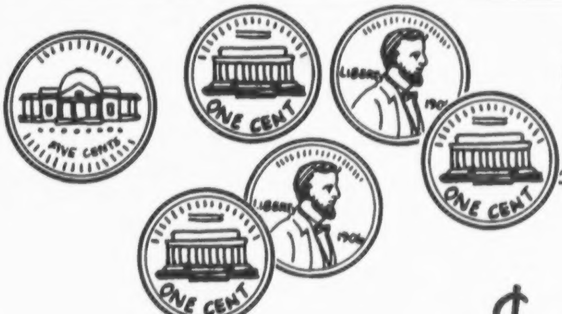
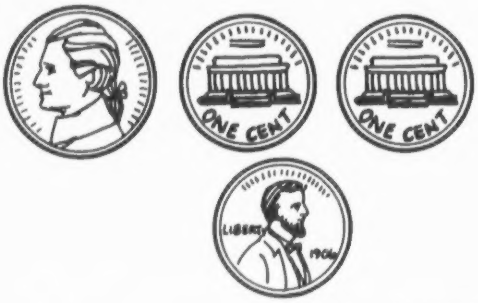
LIBERTY
1906

_____ ¢

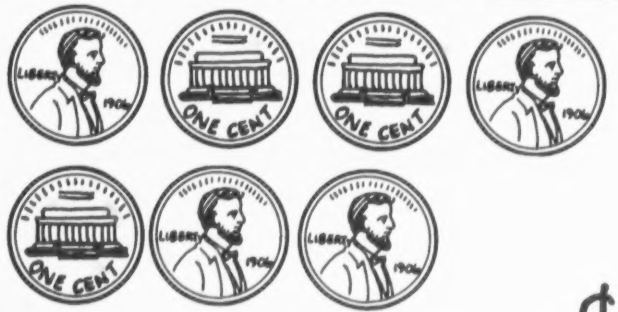



FIVE CENTS
ONE CENT
LIBERTY
1906

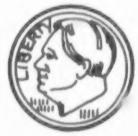
_____ ¢


ONE CENT
LIBERTY
1906

_____ ¢


LIBERTY
1906
ONE CENT

_____ ¢



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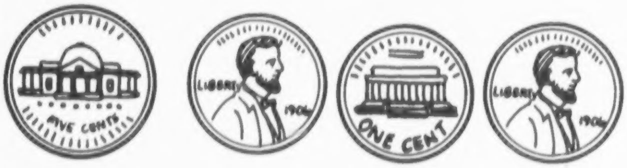
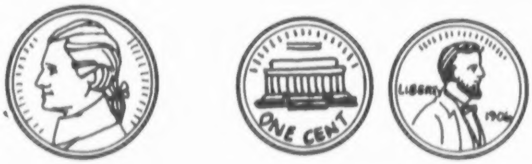

FIVE CENTS
LIBERTY
1906
ONE CENT

_____ ¢


ONE CENT
LIBERTY
1906

_____ ¢

Coins

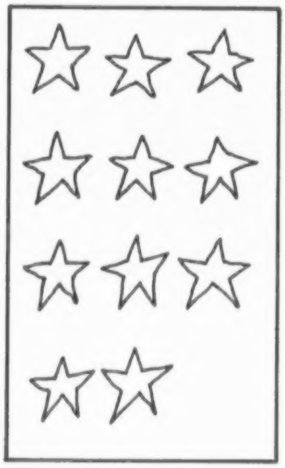
Count coins. Write correct amount. See Unit 10 Teacher's Manual.

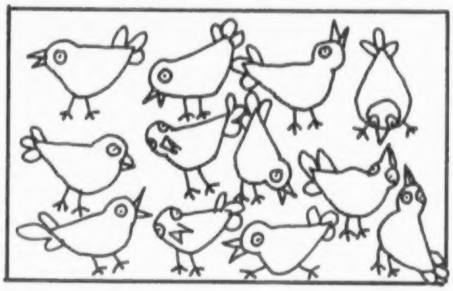
266

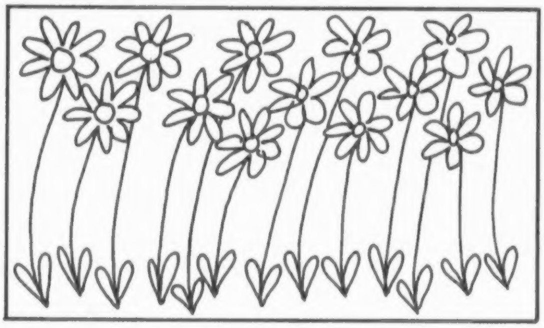
106

Name ________________________________

11







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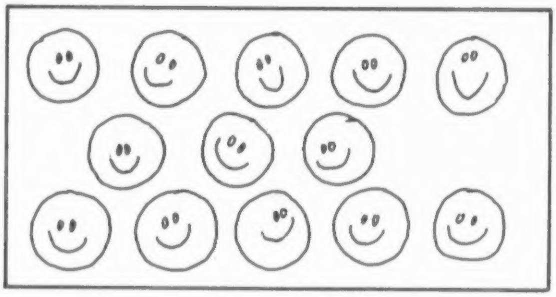

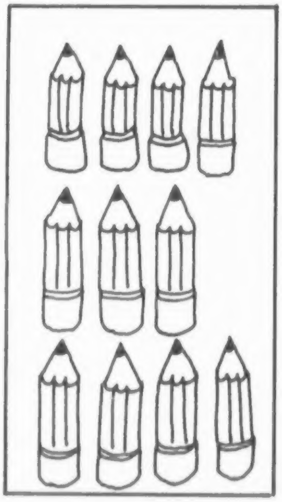

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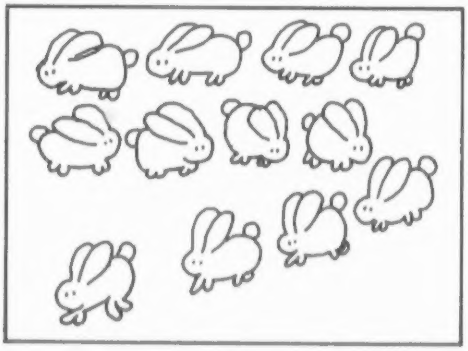


Counting and recognizing-11,12,13

Draw a line from each number to correct picture. Important - Sing Astra's Song. Discuss Astra and use appropriate Unit 11 activities following all lessons.

Name ______________________

11

11 11 11 11

12

12 12 12 12

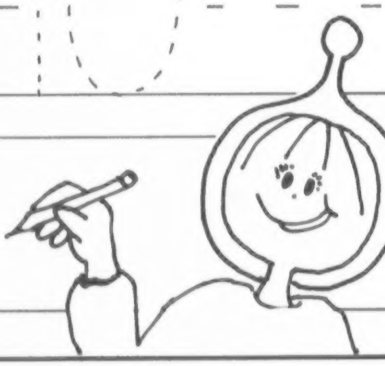
13

13 13 13 13

0 1 2 3 4 5

6 7 8 9 10

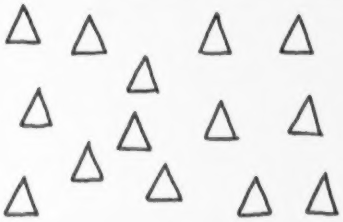
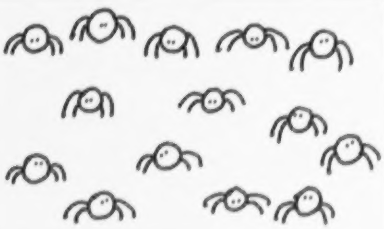
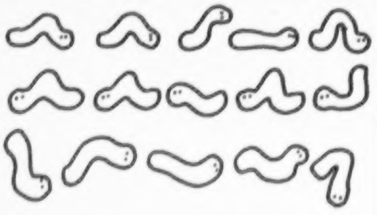
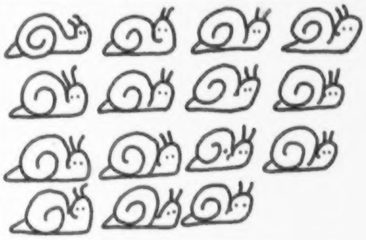
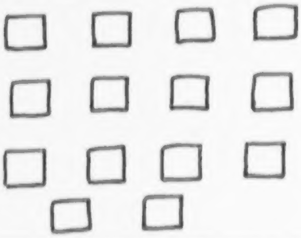
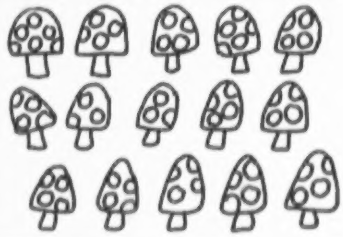
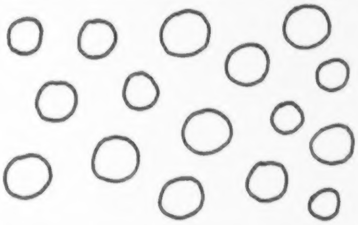
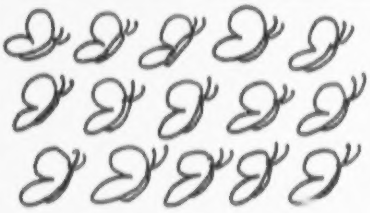
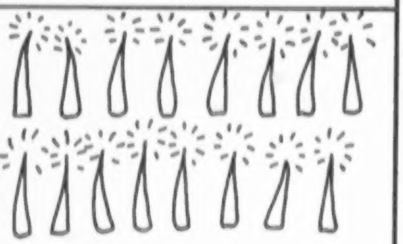
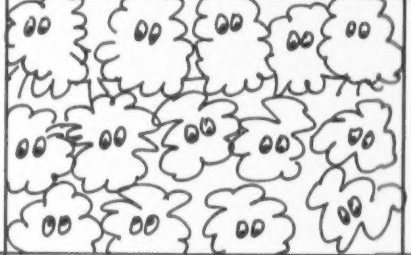
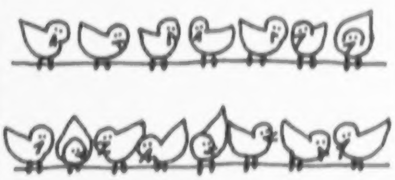
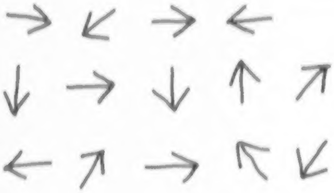
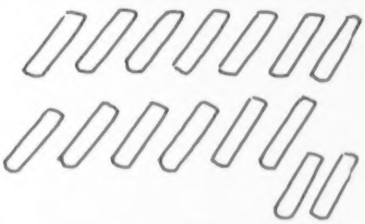
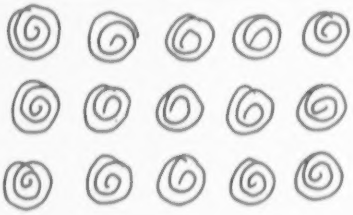
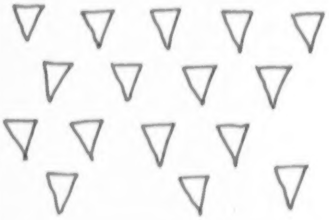
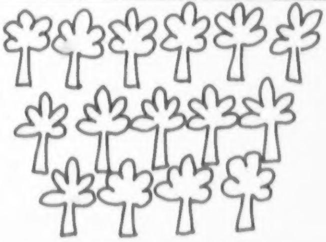
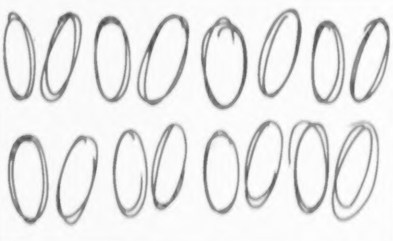
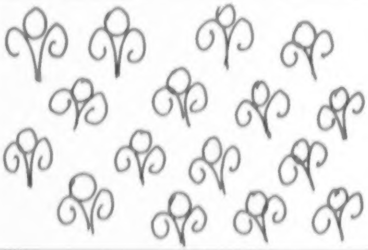
11 12 13



Writing - 11, 12, 13

Top - Trace and write each number. Color correct number of square.
Bottom - Trace 1-13. See Unit 11 Teacher's Manual.

86 Name _ _ _ _ _ _

14			
15			
16			
14			
15			
16			

Recognizing and Counting 14,15,16

Circle correct set for each number.

See Unit 11 Teacher's Manual.

Name ______________________ 87

14 14 14 14 14

△△△△△△△△△△
△△△△△△△△△△

15 15 15 15 15

△△△△△△△△△△
△△△△△△△△△△

16 16 16 16 16

△△△△△△△△△△
△△△△△△△△△△

Writing 14,15,16 Top - Trace and write each number. Color correct number of triangles. Bottom - Write 1-16. See Unit 11 Teacher's Manual.

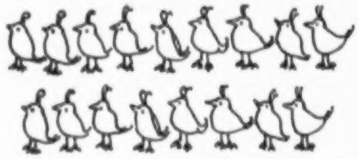
88 Name ______________________

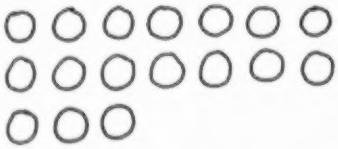
17

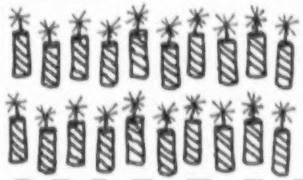
18

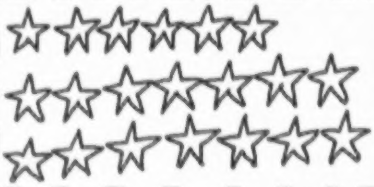
19

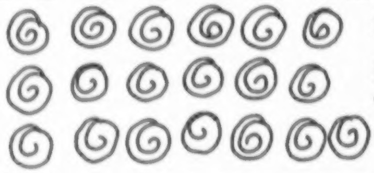
20

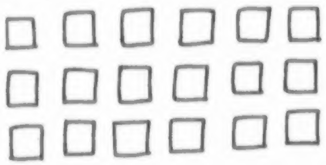


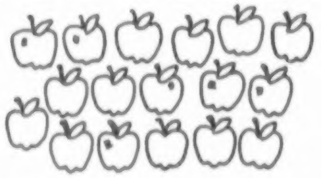


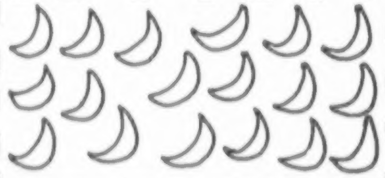












Recognizing and Counting 17, 18, 19, 20

Cut and paste two correct pictures by each number. See Unit 11 Teacher's Manual.

Name ____________________

89

17 17 17 17

○ ○ ○ ○ ○ ○ ○ ○ ○ ○
○ ○ ○ ○ ○ ○ ○ ○ ○ ○

18 18 18 18

○ ○ ○ ○ ○ ○ ○ ○ ○ ○
○ ○ ○ ○ ○ ○ ○ ○ ○ ○

19 19 19 19

○ ○ ○ ○ ○ ○ ○ ○ ○ ○
○ ○ ○ ○ ○ ○ ○ ○ ○ ○

20 20 20 20

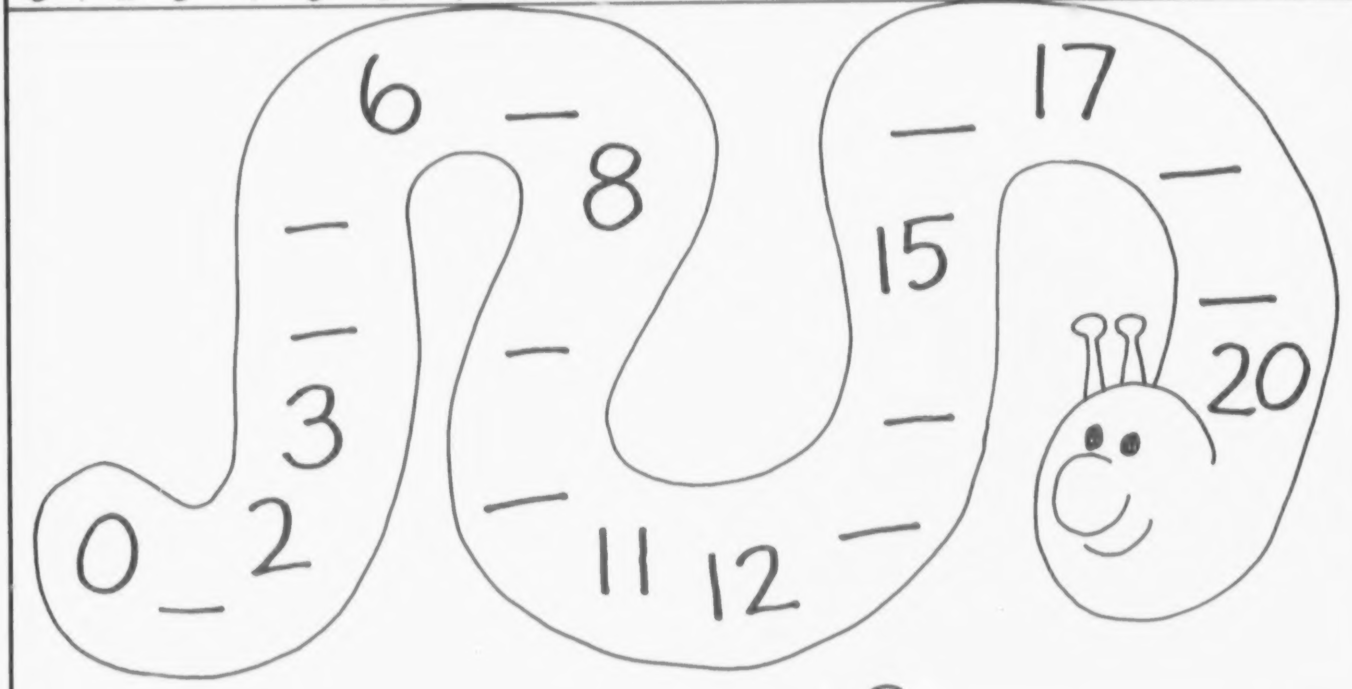
○ ○ ○ ○ ○ ○ ○ ○ ○ ○
○ ○ ○ ○ ○ ○ ○ ○ ○ ○

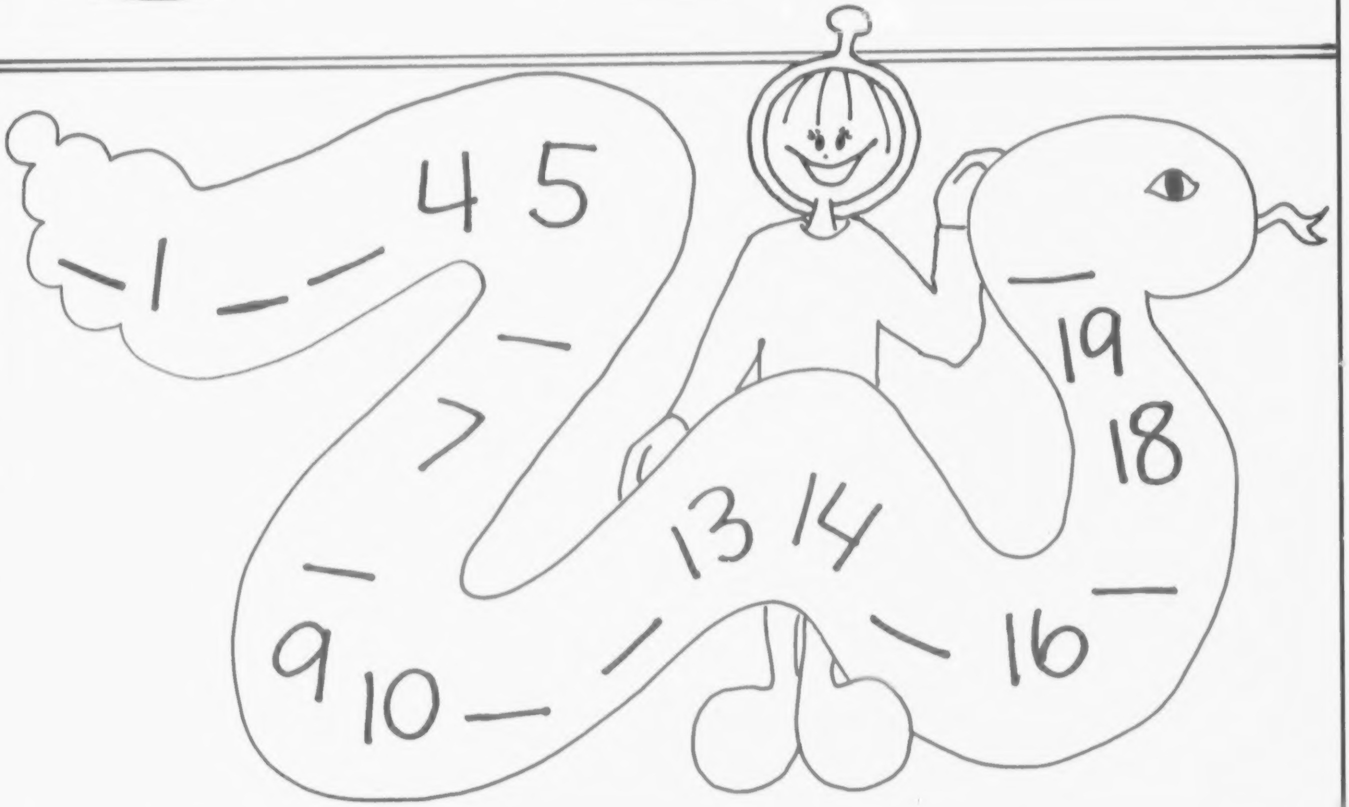
Reviewing 17, 18, 19, 20

Trace and write the numbers. Color corresponding number of objects for each number. See Unit 11 Teacher's Manual.

90 Name

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


0
2
3
6
8
11
12
15
17
20


1
4
5
7
9
10
13
14
16
18
19

Numeration - Missing Numbers

Top - Fill in blanks with correct missing numbers. Bottom - Fill in blanks. Count from 1-20. See Unit 11 Teacher's Manual.

Name ____________________

91

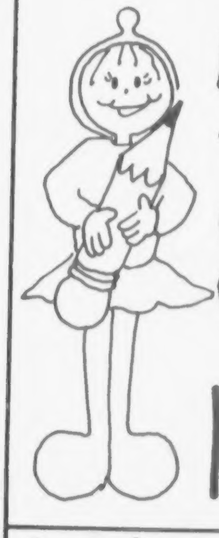
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

0 1 ______ ______ 4 ______

6 7 ______ ______ ______

11 12 ______ ______ ______

16 ______ ______ ______ ______



2, 3, ______

5, 6, ______

8, 9, ______

11, 12, ______

14, 15, ______

17, 18, ______

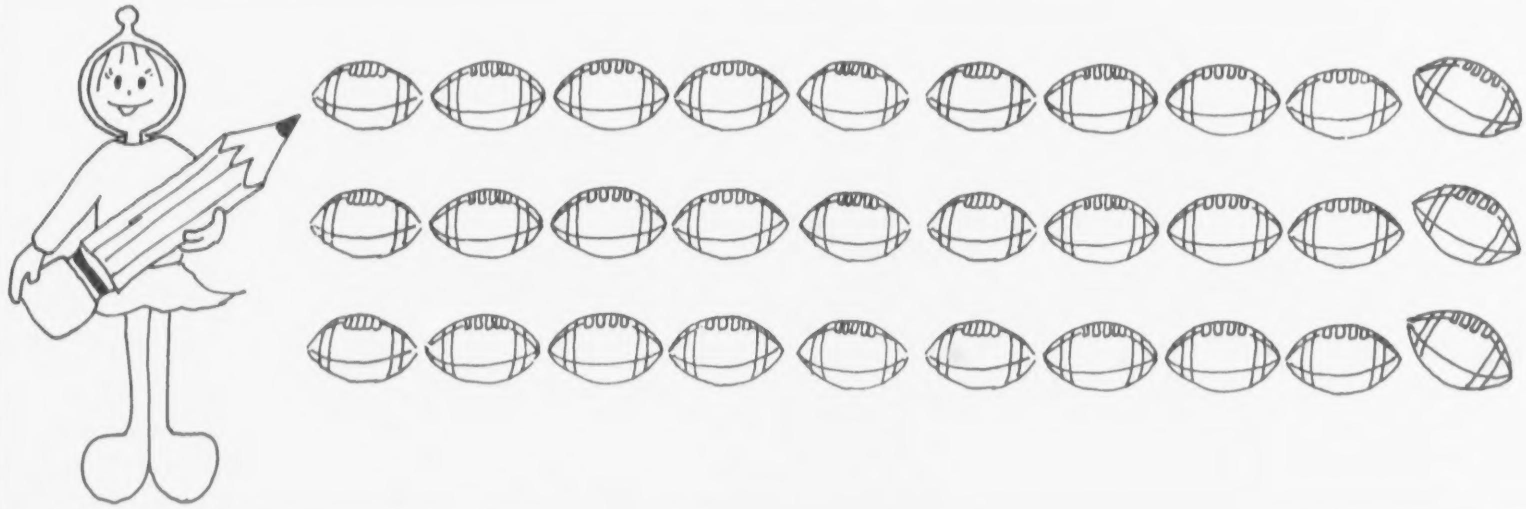
18, 19, ______

10, 11, ______

Counting Review

Top - Trace and write numbers. Bottom - Complete number sequences. See Unit 11 Teacher's Manual.

Name ____________________



10

20

30

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

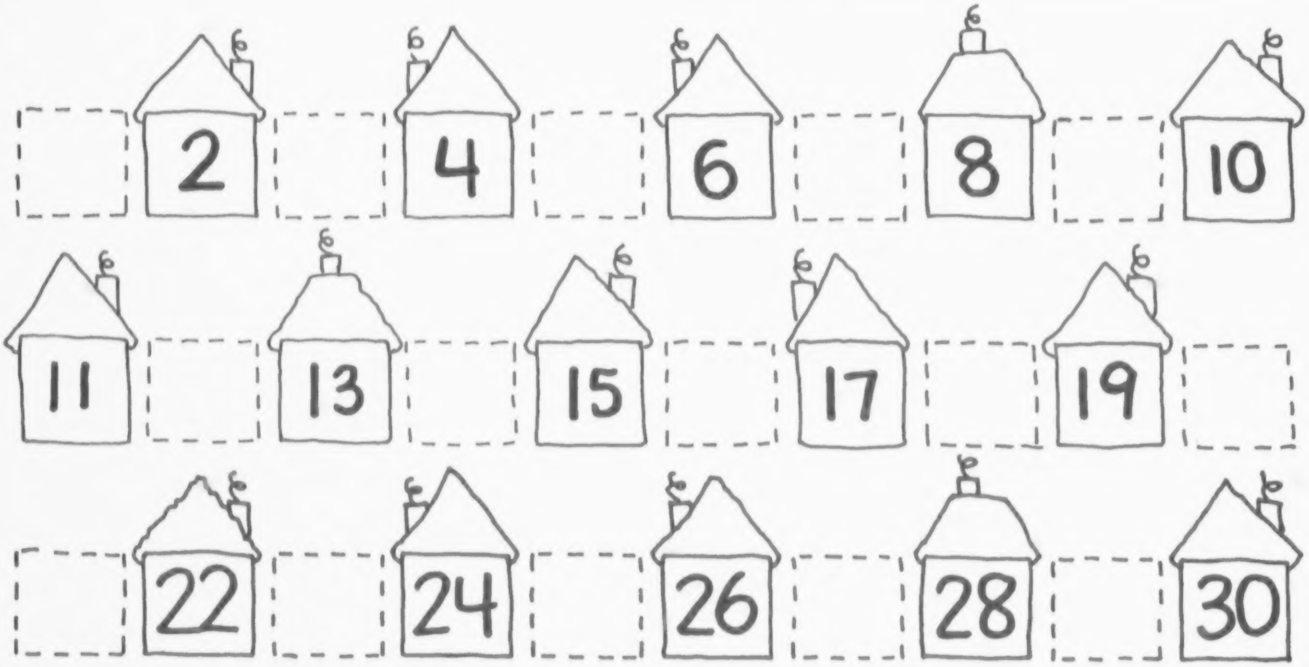
21 22 23 24 25 26 27 28 29 30

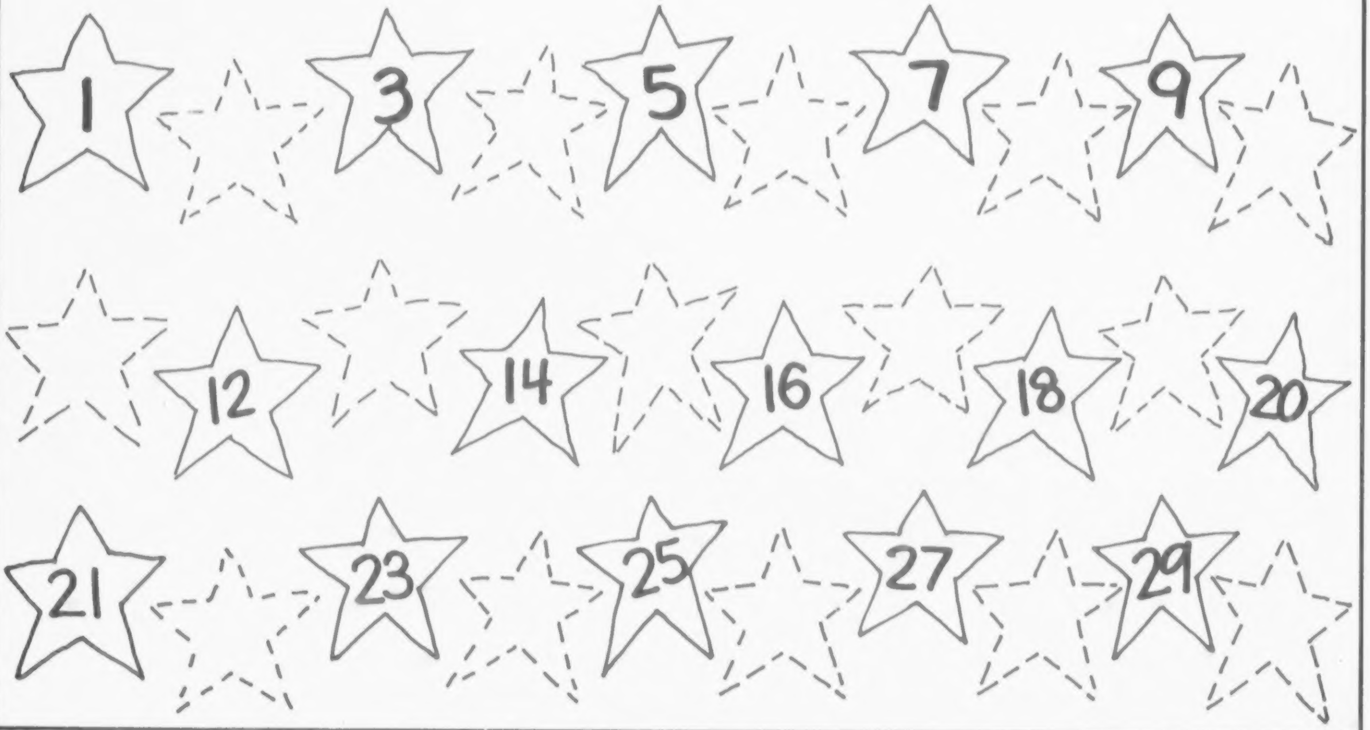
Ones and Tens

Count footballs by 1's, count by 10's. Trace numerals. Read by 1's and 10's. Important - Sing Astra's Song. Discuss Astra and use appropriate Unit 12 activities with all lessons.

Name ______________________

1 2 3 4 5 6 7 8 9 10 • 11 12 13 14 15 16 17 18 19 20 • 21 22 23 24 25 26 27 28 29 30


2
4
6
8
10
11
13
15
17
19
22
24
26
28
30


1
3
5
7
9
12
14
16
18
20
21
23
25
27
29

Count and write 1-30

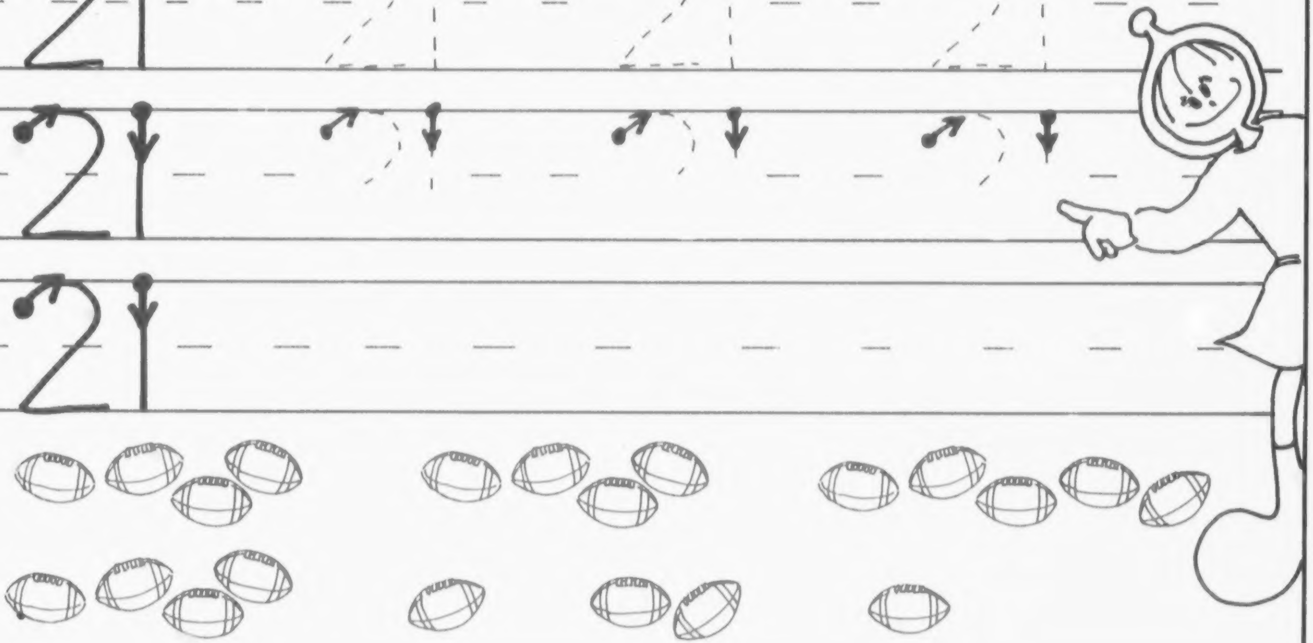
Count. Trace all numbers. Circle 10, 20, 30. Review counting by 10's. See Unit 12 Teacher's Manual.

94 Name

21

21

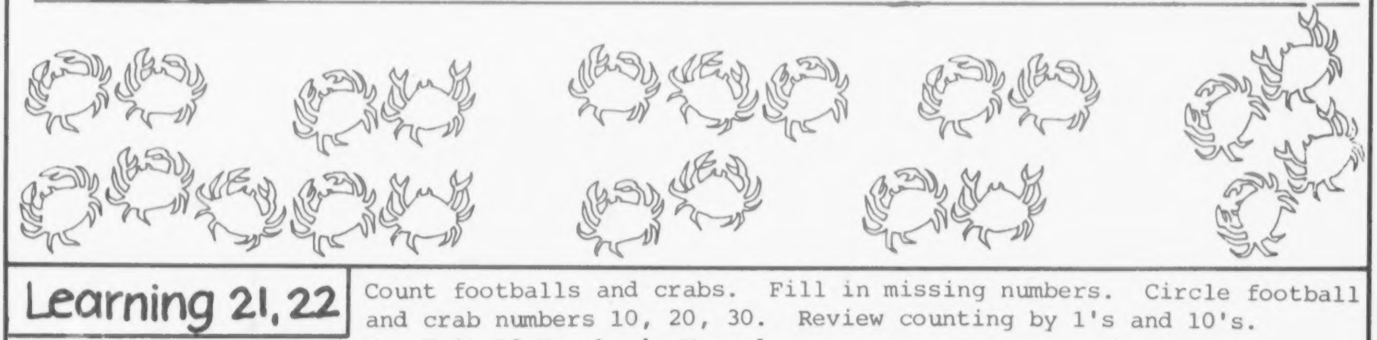
21



22

22

22



Learning 21, 22

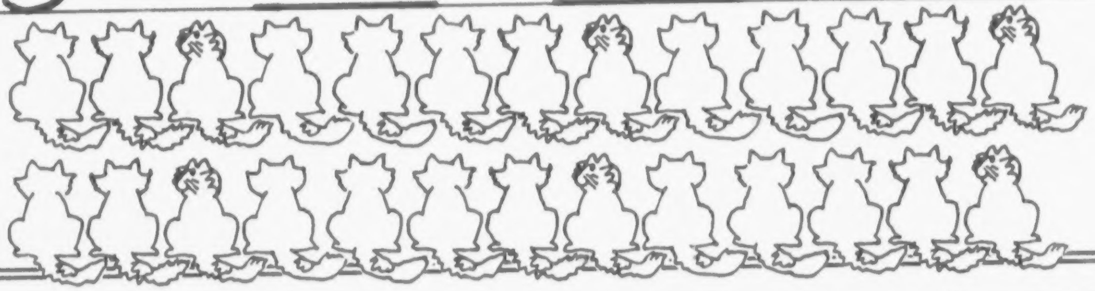
Count footballs and crabs. Fill in missing numbers. Circle football and crab numbers 10, 20, 30. Review counting by 1's and 10's. See Unit 12 Teacher's Manual.

Name

23

23

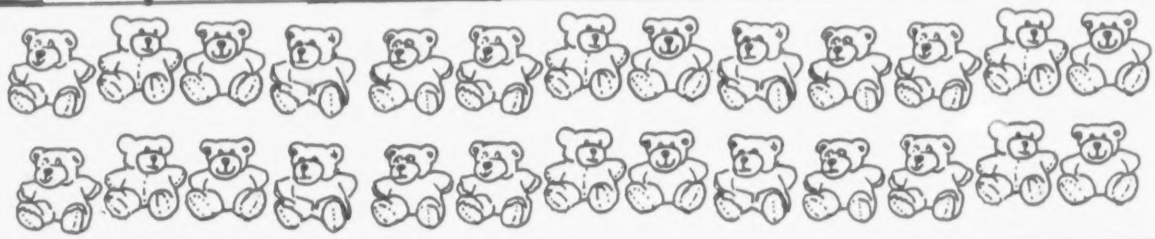
23



24

24

24



Learning 23,24

Trace and write 23 and 24. Color correct number of squares and triangles. Note to teacher - for easy correction count number not colored. See Unit 12 Teacher's Manual.

96 Name ____________

25 26 27

25, 26, ___

___, 26, 27

25, ___, ___

___, ___, 27

25, ___, 27

25, ___, ___

___, ___, 27

25, 26, ___

25, ___, 27

___, 26, 27

Learning 25, 26, 27

Trace numbers at top. Fill in missing numbers.
See Unit 12 Teacher's Manual.

Name ____________________

97

28 29 30

28, 29, ___

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28, ___, ___

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28, ___, 30

28, ___, ___

___, ___, 30

28, 29, ___

28, ___, 30

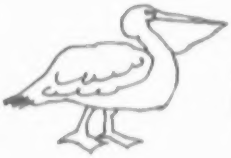
___, 29, 30

Learning 28, 29, 30

Trace numbers at top. Write in missing numbers. See Unit 12 Teacher's Manual.

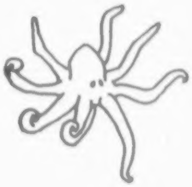
98 Name ______________________

0, 1, 2, 3, 4, 5,



6, 7, 8, 9, 10,

11, 12, 13, 14, 15,



16, 17, 18, 19, 20,

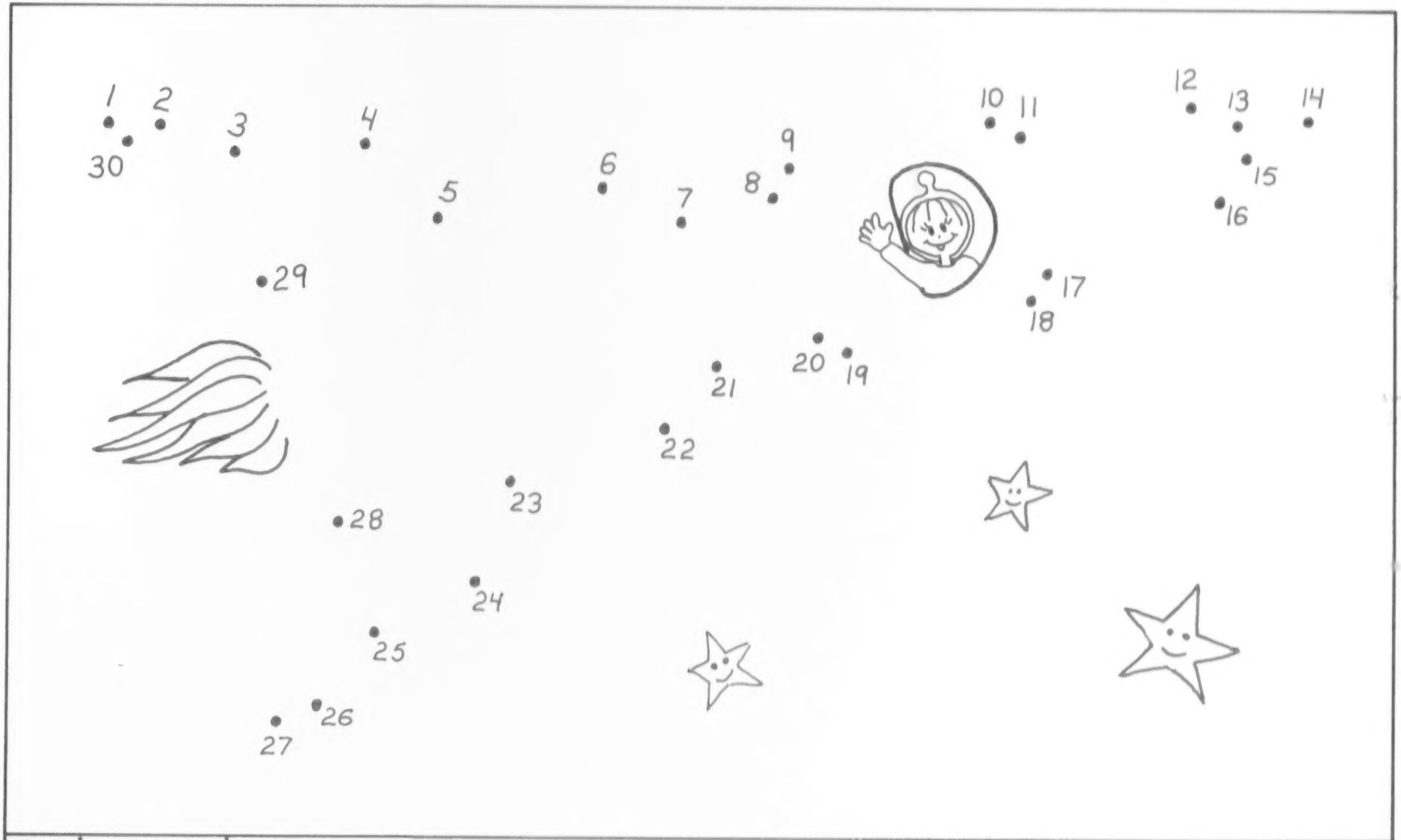
21, 22, 23, 24, 25,

26, 27, 28, 29, 30

Counting and Writing Review

Count and trace numbers 0-30.
See Unit 12 Teacher's Manual.

99 Name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Review 1-30

Connect the dots from 1-30. Color picture. See Unit 12 Teacher's Manual.

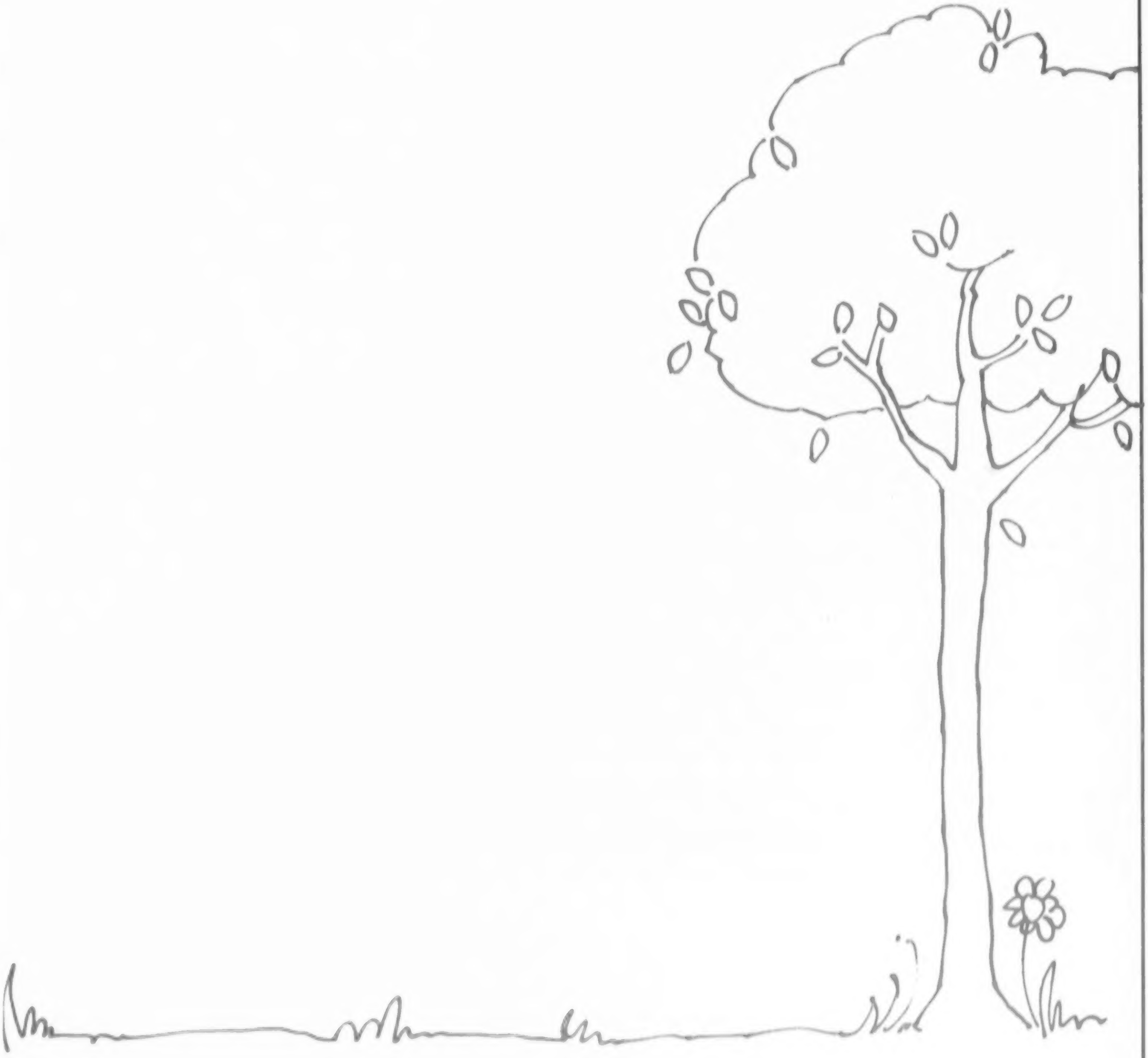
100 Name

A day is the time from morning to night.

Morning	Night

Calendar-Days Draw yourself in the morning and at night. Important - Sing Astra's Song. Discuss Astra and use appropriate Unit 13 activities following all lessons.

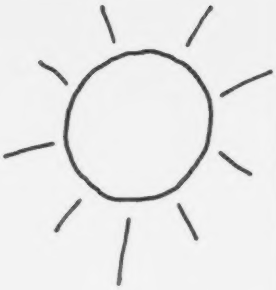
Name

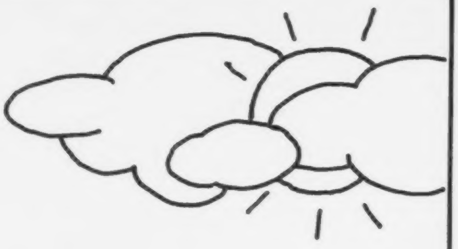


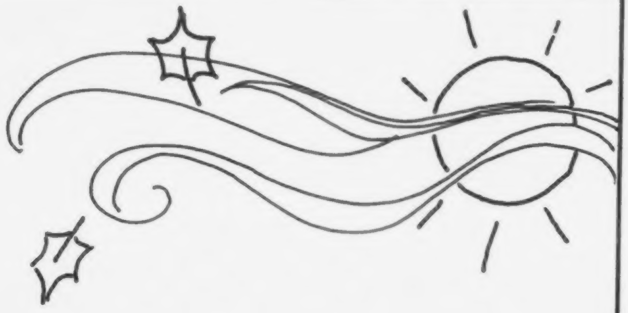
Calendar-Week

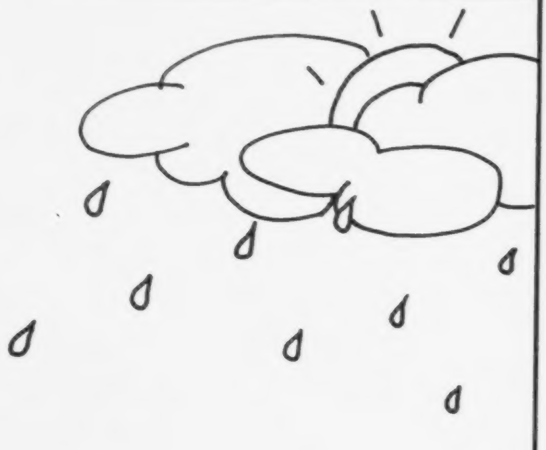
Draw the people in your family on Saturday. Tell the children that the calendar week is seven days. See Teacher's Manual, Unit 13.

102 Name ______________________









Calendar-Month

Draw a sunny week, cloudy week, windy week, and rainy week. (Stress that a month is four weeks long.) See Teacher's Manual, Unit 13.

Name ______________________

103

Here I am today.

Here I am one year older.

Calendar-Year

Draw yourself today. Draw yourself one year older.
See Teacher's Manual, Unit 13.

104

Name ______________________

week

days in Week

Month

Weeks in a Month

Year

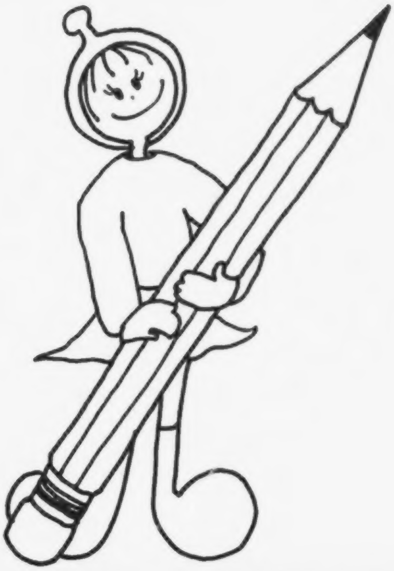
Months in a Year

Calendar-Year Relationships

Color the week, color the days in a week different colors. Repeat for the month and year. See Teacher's Manual, Unit 13.

Name ______________________

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

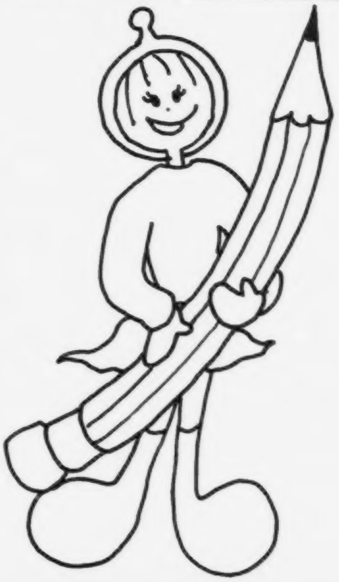


Calendar-Trace Numbers

Trace the numbers. Read all the Sunday numbers, Monday numbers, etc. Draw a picture of your favorite month. See Teacher's Manual, Unit 13.

106 **Name** ______________________________

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
☒	☒	1	2		4	5
6			9	10		
	14	15		17		19
20		22	23			26
27	28		30	☒	☒	☒



Calendar- Number Sequence

Fill in the missing numbers. Count together.
Draw Astra. See Teacher's Manual, Unit 13.

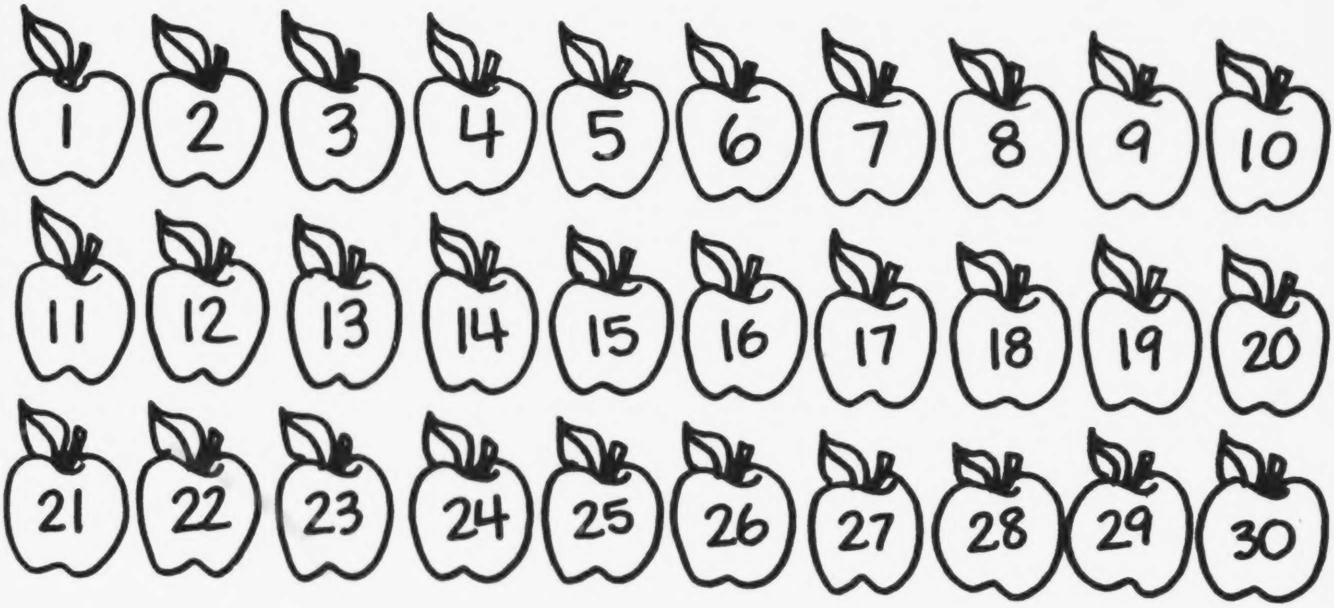
Name ______________________

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Calendar-Review Do this month's calendar as a directed lesson. Draw a picture depicting the month or season. Discuss yesterday, today, tomorrow. See Teacher's Manual, Unit 13.

108

Name ________________________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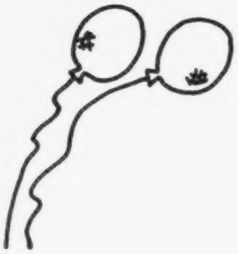
1		3		5	
7		9		11	
13		15		17	
19		21		23	
25		27		29	

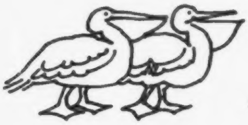
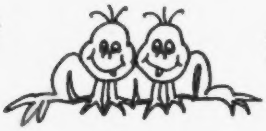
Counting by Two's

Top - Circle 2-4-6-8-etc. BOTTOM - Write 2-4-6-8-etc.
Important - Sing Astra's Song. Discuss Astra and use aappropriate Unit 14, Teacher's Manual.

Name

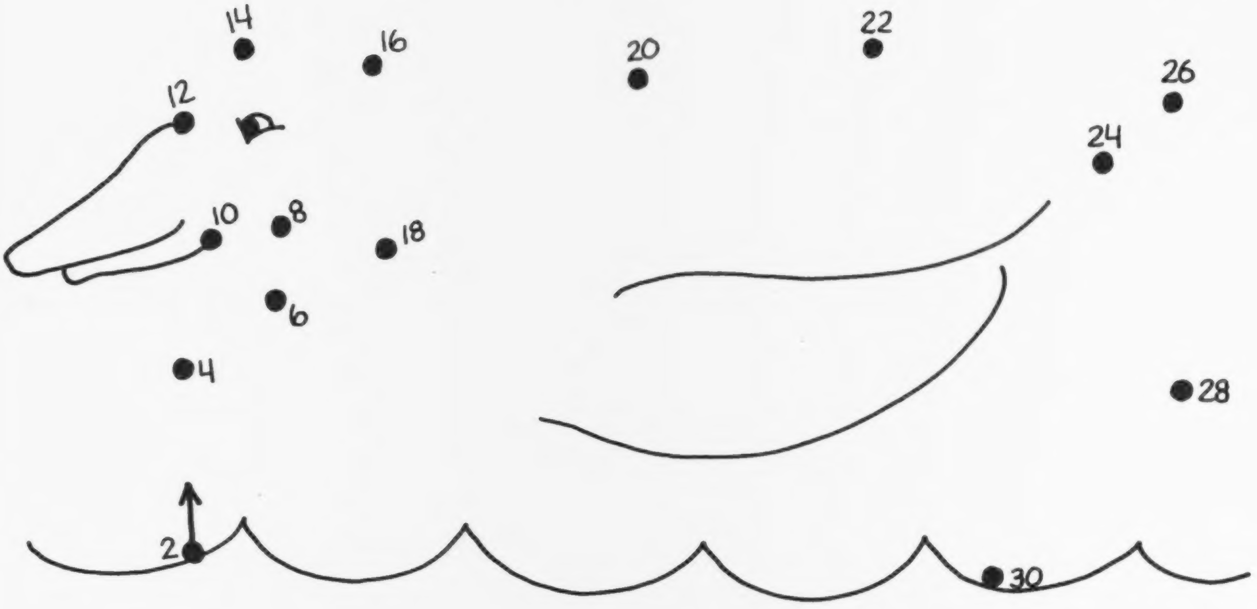
109



Counting/Writing by Two's Write by 2's to 30. Count. See Unit 14, Teacher's Manual.

110 Name ______________________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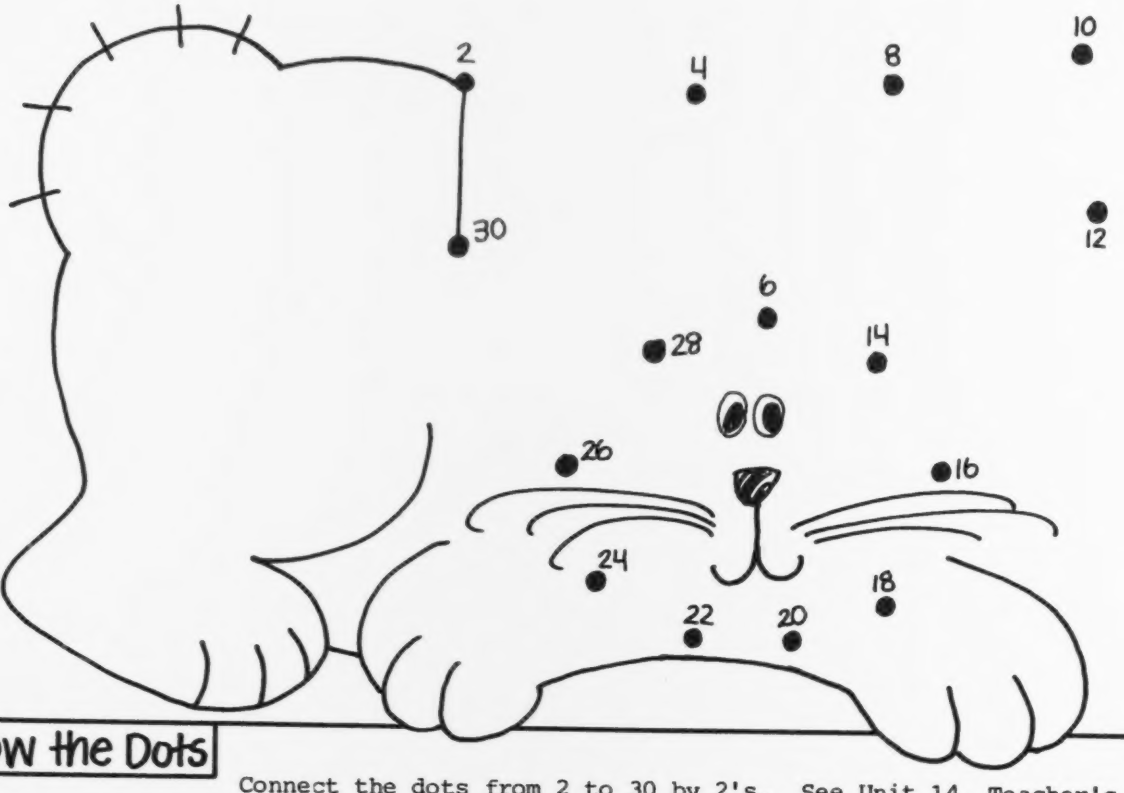
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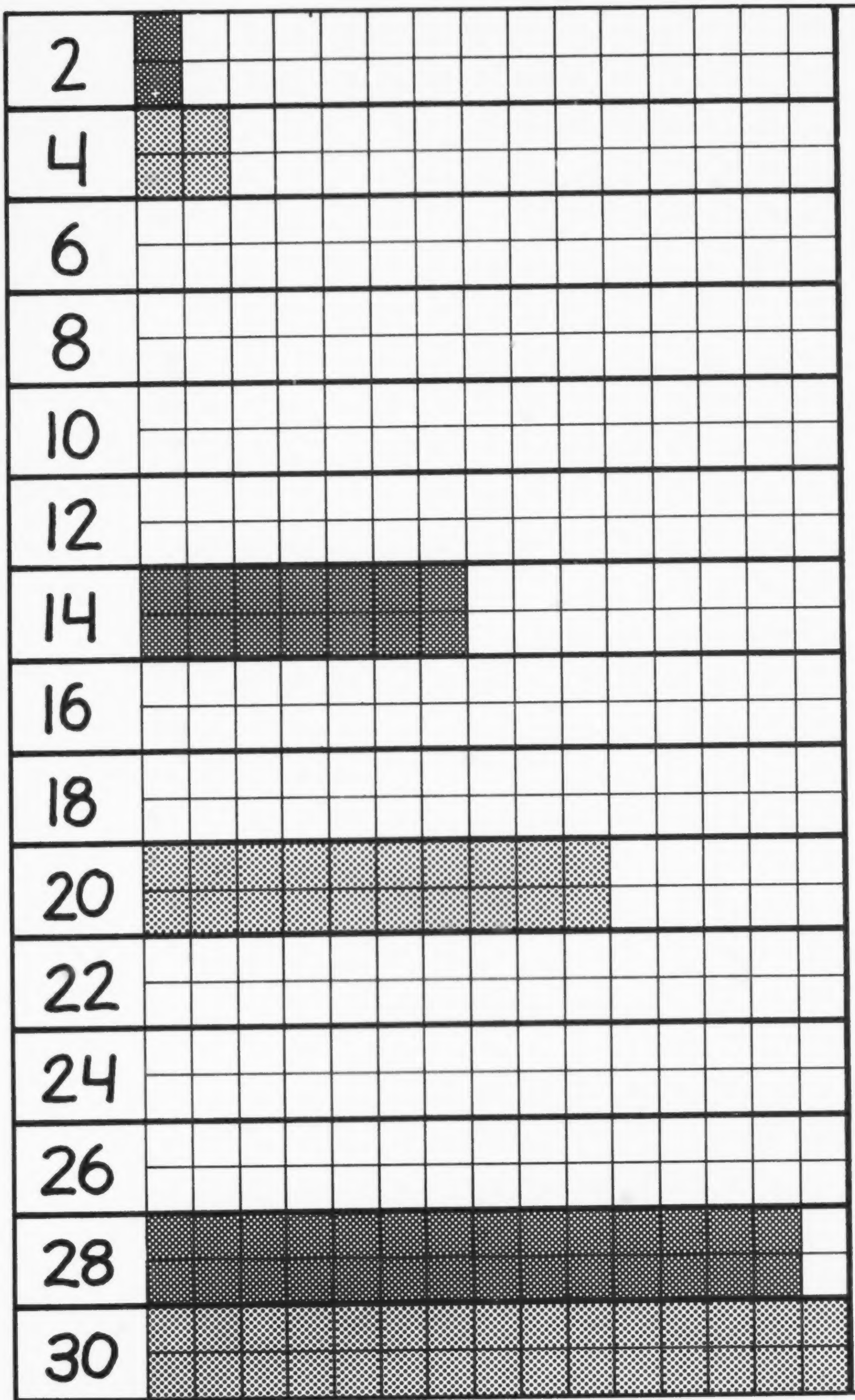
Follow the Dots

Connect the dots from 2 to 30 by 2's. See Unit 14, Teacher's Manual.

Name ________________

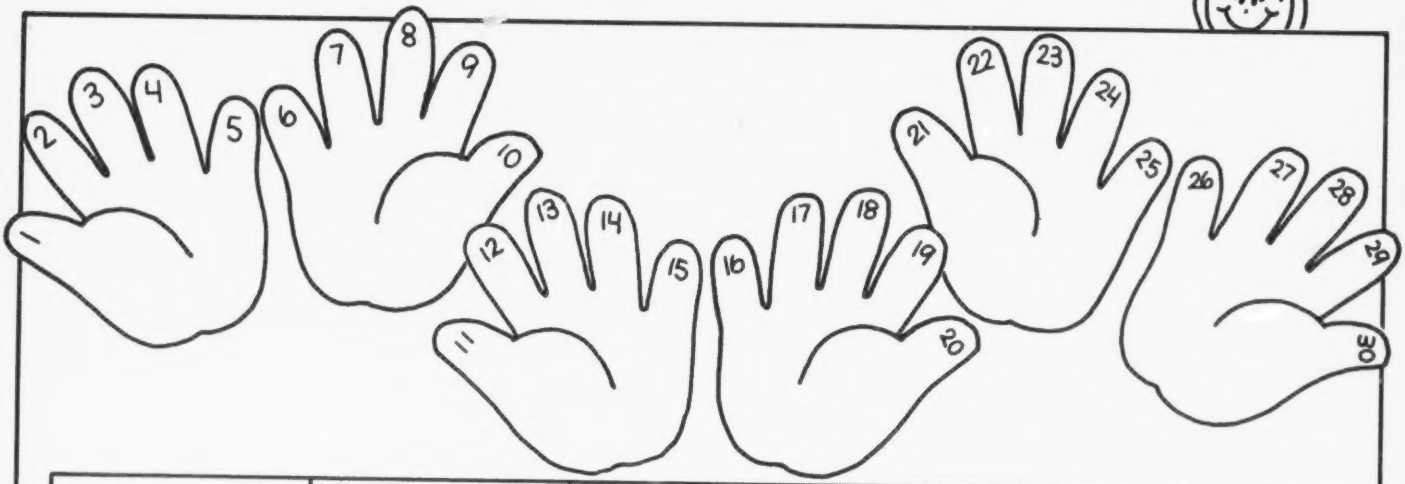
111



Graphing by Two's

Color squares to count by 2's from 2-30. See Unit 14, Teacher's Manual.

112 Name ____________________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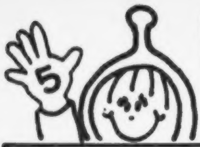
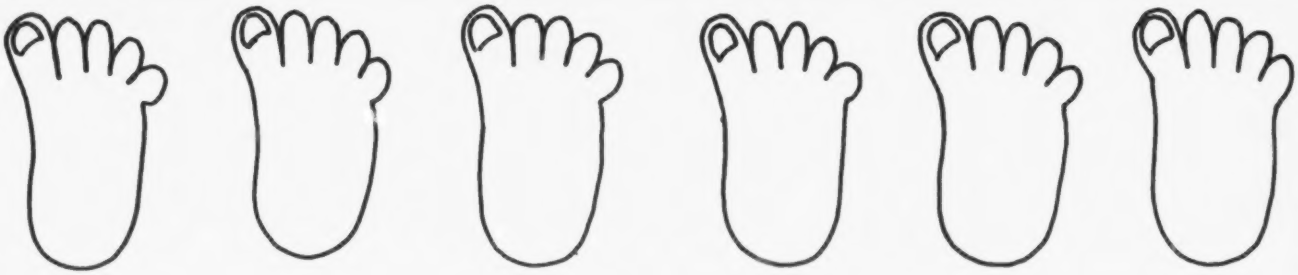
1	2			

Counting by Fives

Write by 1's to 30. Circle 5, 10, 15, etc., by 5's.
Count by 5's to 30. See Unit 14, Teacher's Manual.



Name ______________________



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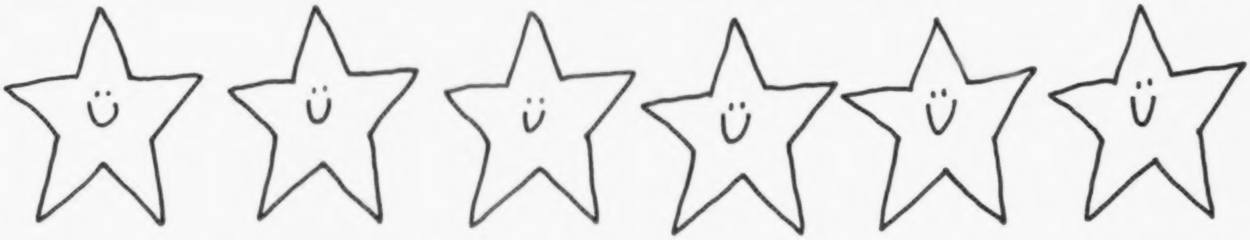
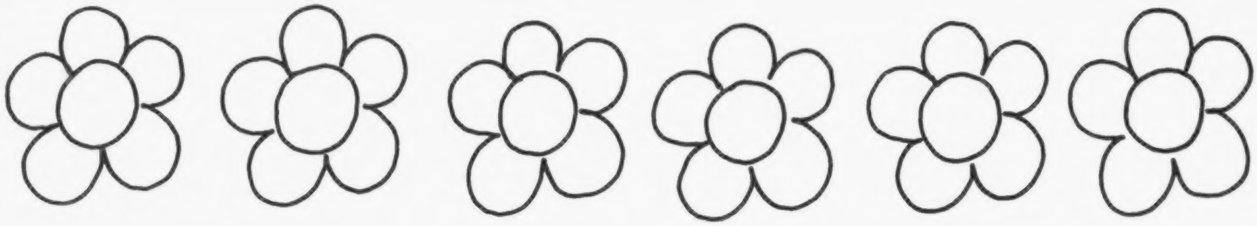


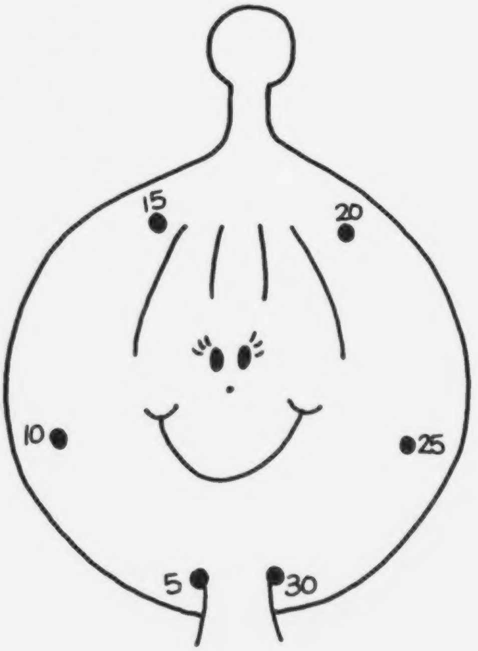


Writing by Fives

Write by 5's to 30. Count by 5's to 30. See Unit 14, Teacher's Manual.

114

Name ______________________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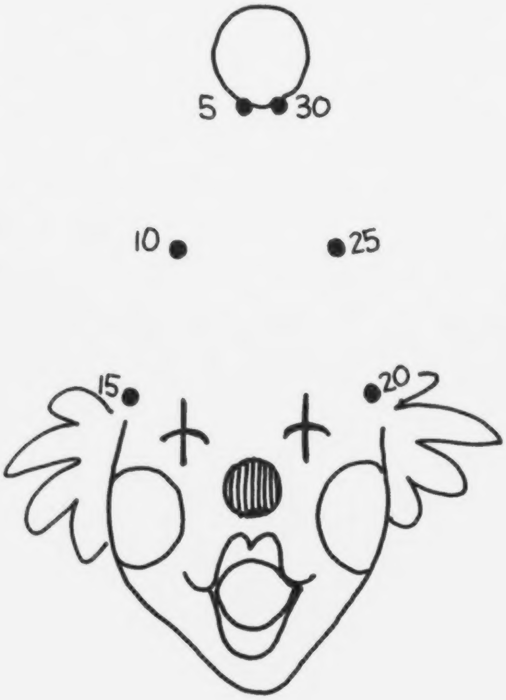
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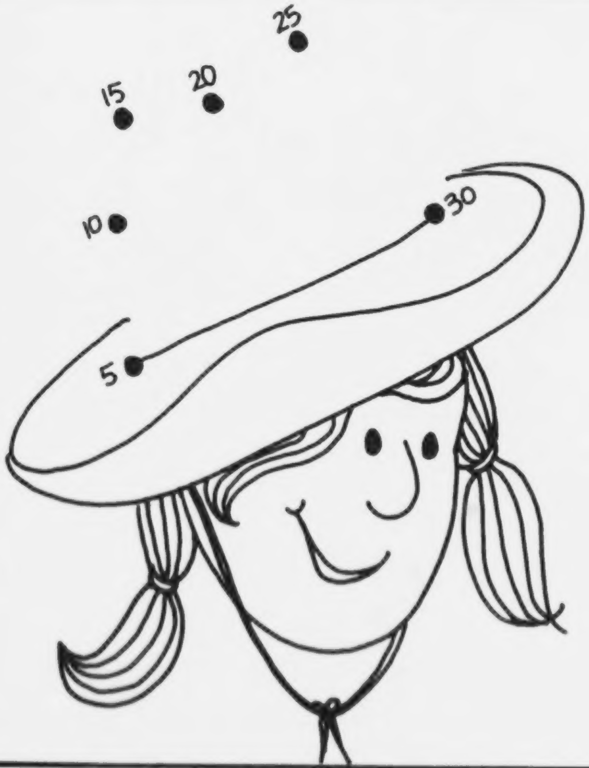
20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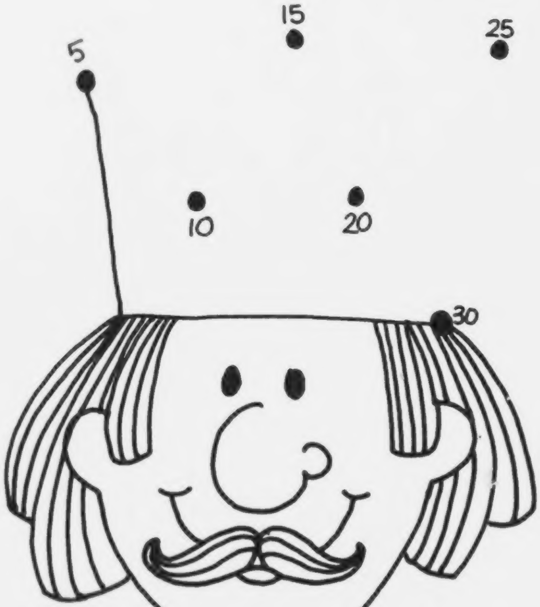
15
25
5
10
20
30

Follow the Dots Connect the dots from 5 - 30 by 5's. See Unit 14, Teacher's Manual.

Name ______________________

5																														
10																														
15																														
20																														
25																														
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Graphing by Fives

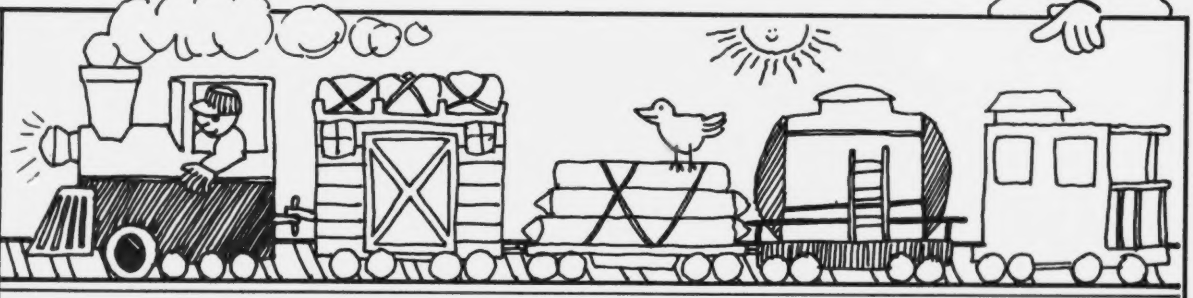
Color rectangles to count from 5 - 30. See Unit 14, Teacher's Manual.

300.1

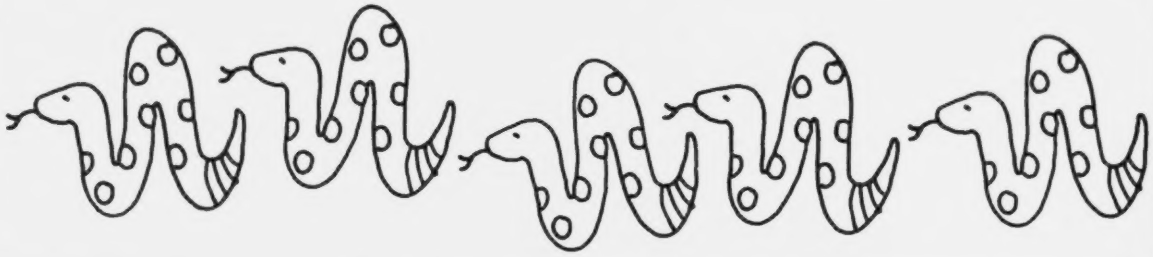
116

Name ____________________

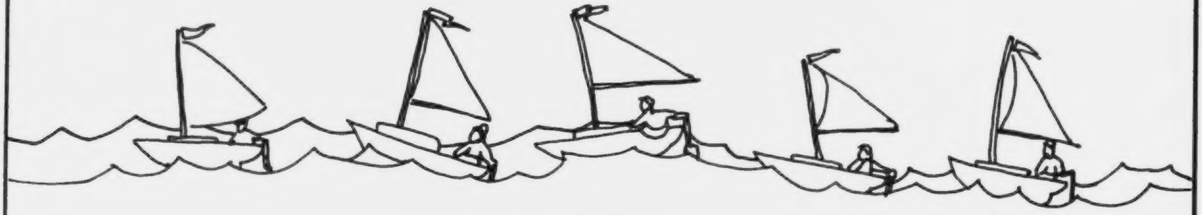
1st



1st



1st



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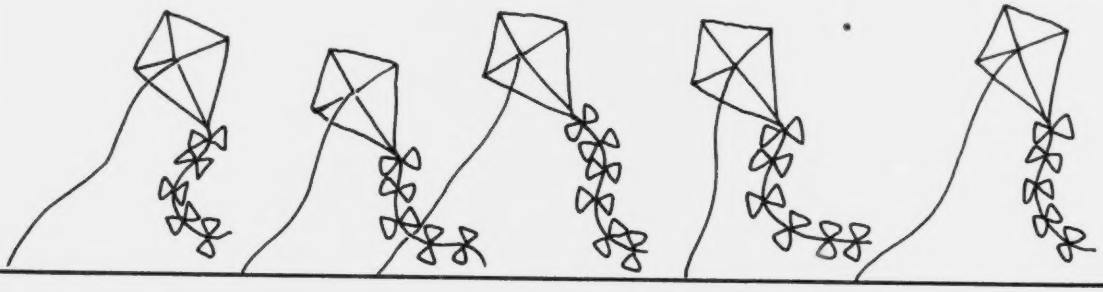

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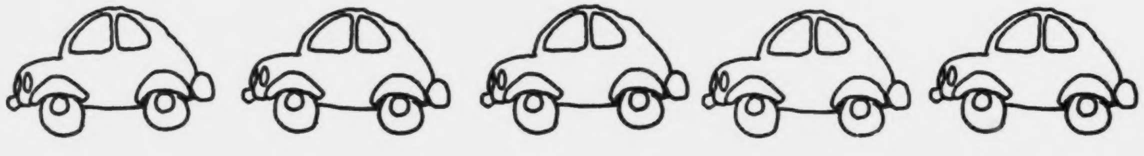
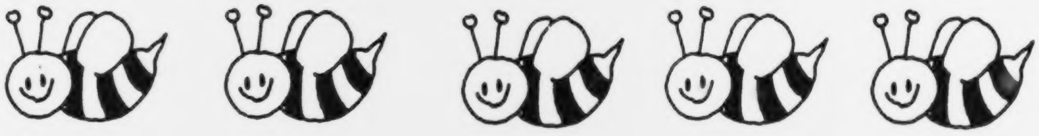


First Circle and color the first one in each row. Important - Sing Astra's Song. Discuss Astra and use appropriate Unit 15 activities following all lessons.

Name _______________

2nd



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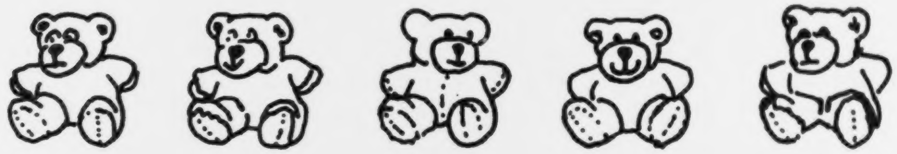

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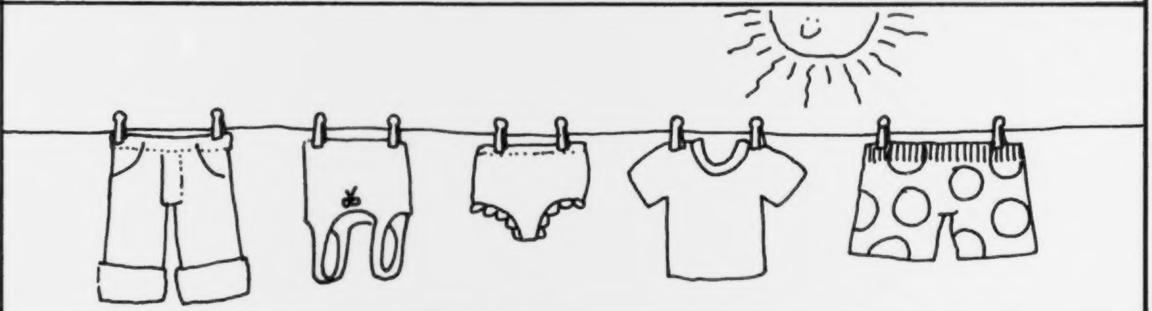

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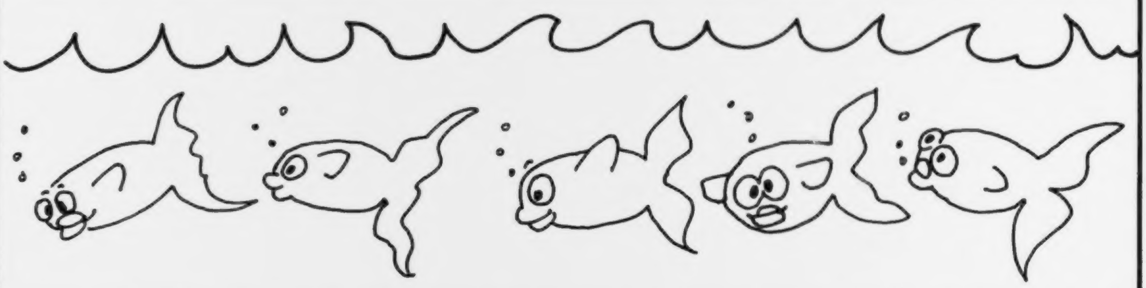

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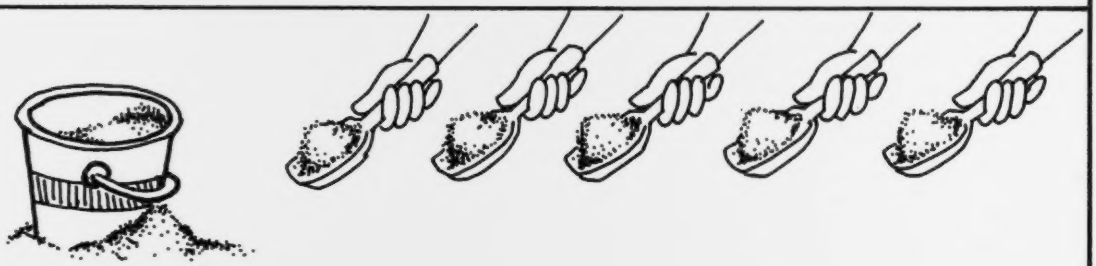
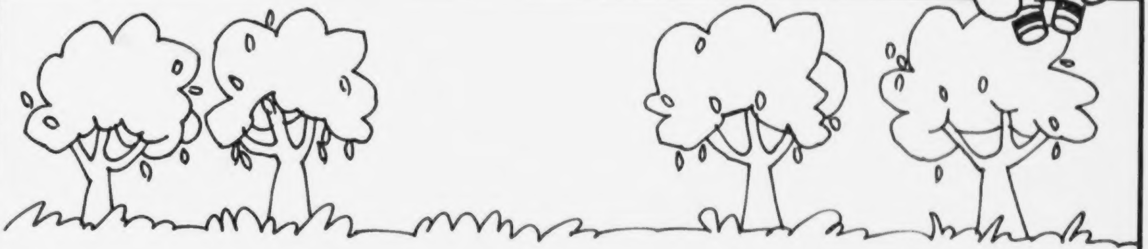
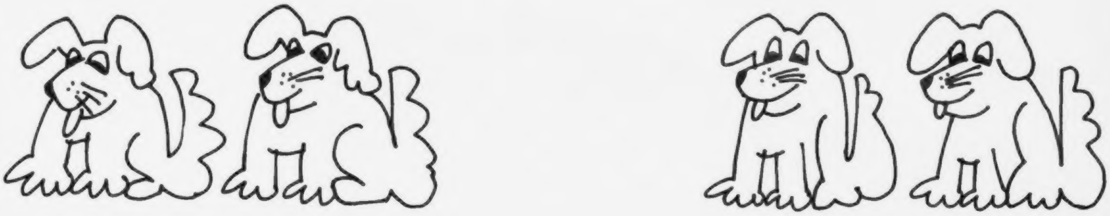
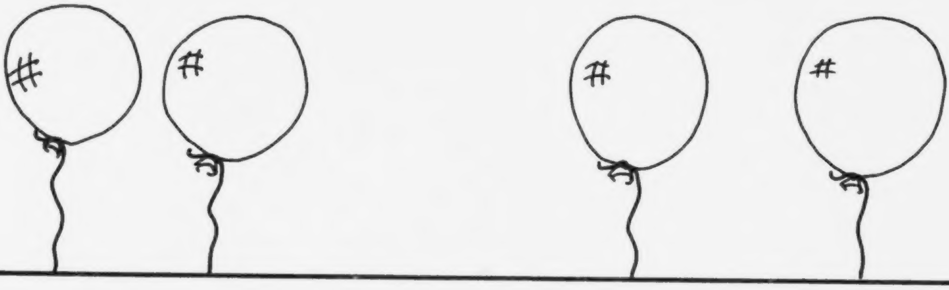
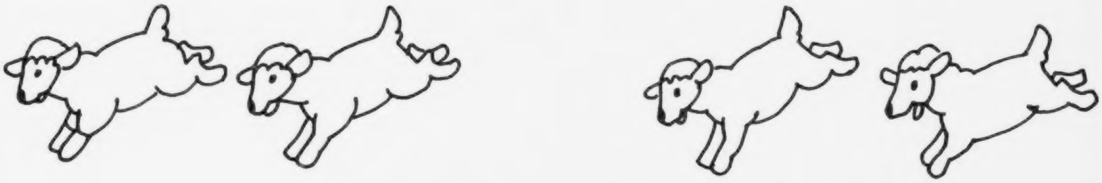


Second

Underline and color the second one in each row. Review. Draw a box around the first object in each row. See Teacher's Manual, Unit 15.

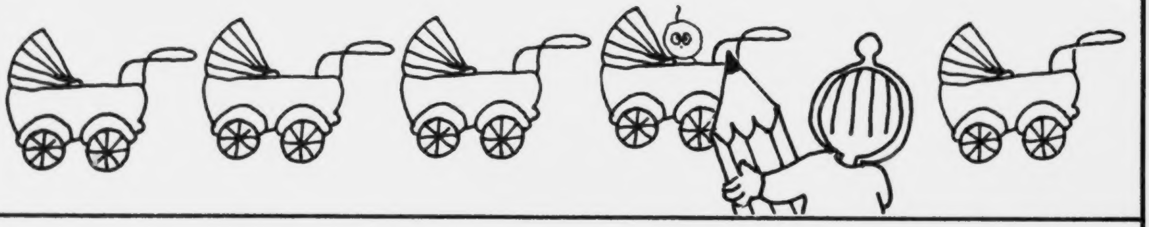
118

Name ______________________

3rd	
3rd	
3rd	
3rd	
3rd	
Third	Draw the third one in each row. Color the first one in each row. Put an X on the second one in each row. See Teacher's Manual, Unit 15.

Name ______________________

4th



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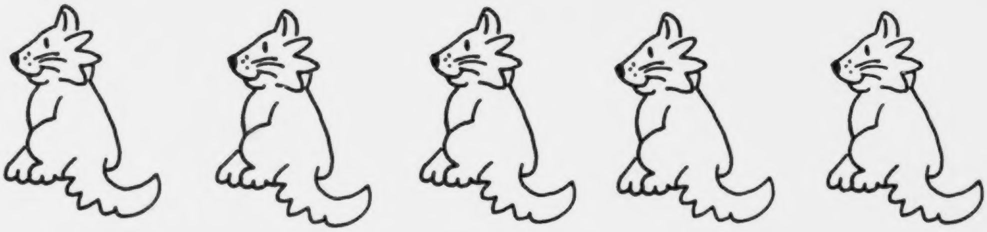

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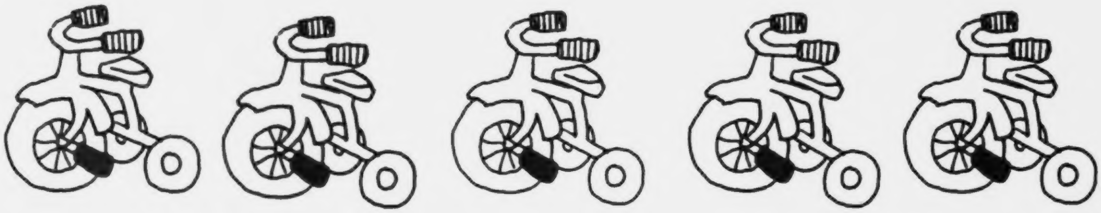

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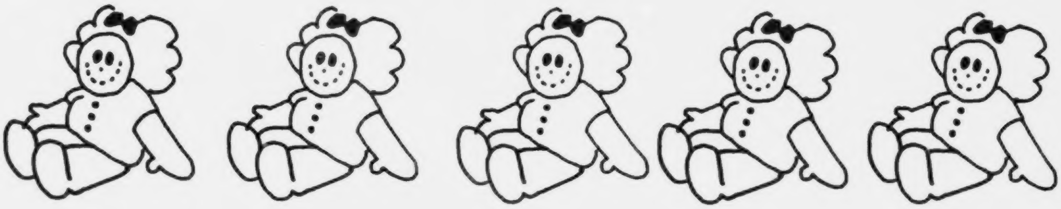

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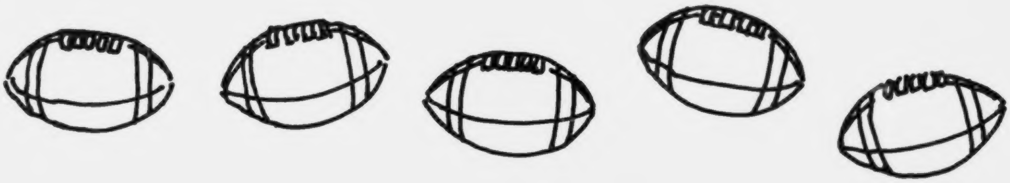


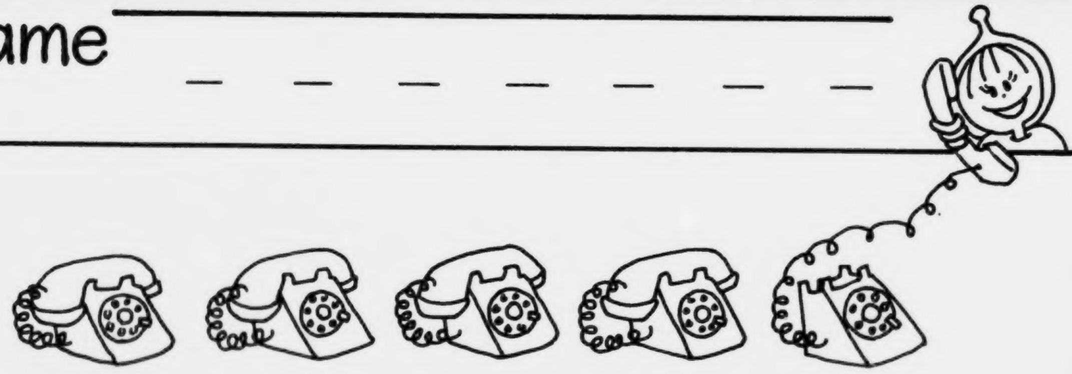
Fourth

Color the fourth one in each row. Put an X on the first object, put a box around the second object, draw a line under the third object in each row. See Teacher's Manual, Unit 15.

120

Name ______________________

5th



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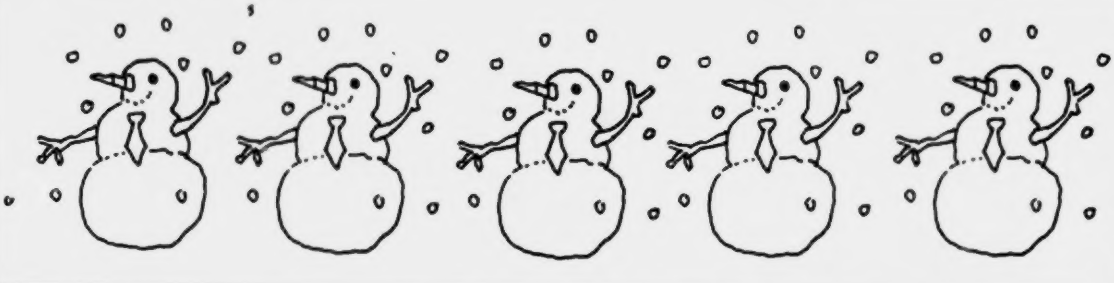

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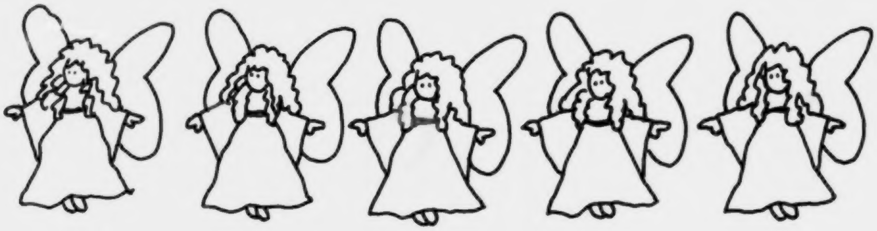

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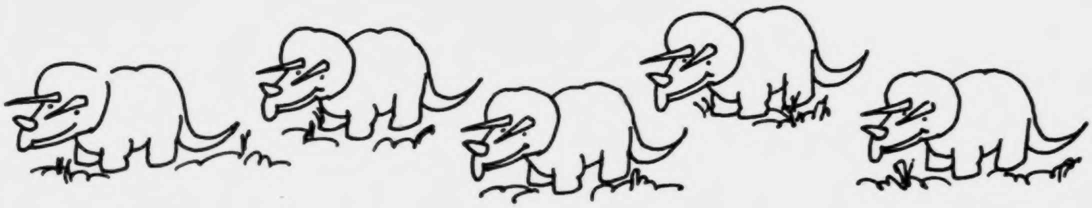
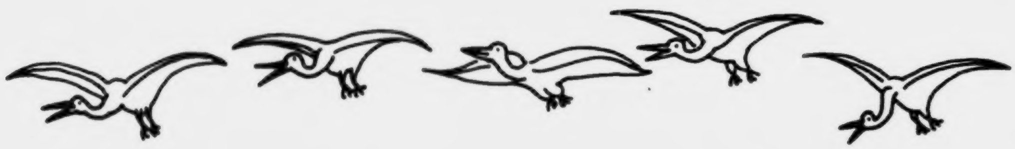


5th

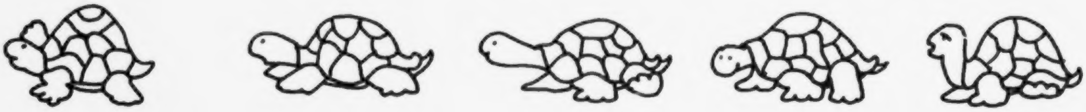


Fifth

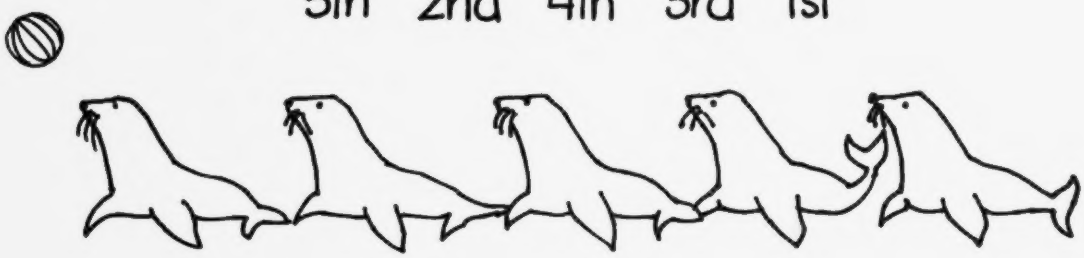
Color the fifth one in each row. Draw a line under the first, draw a box around the second, draw a line above the third, and put an X on the fourth one in each row. See Teacher's Manual, Unit 15.

Name _ _ _ _ _ _ _

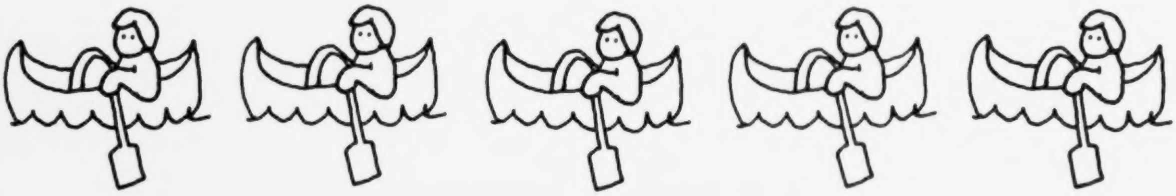
2nd 1st 4th 3rd 5th



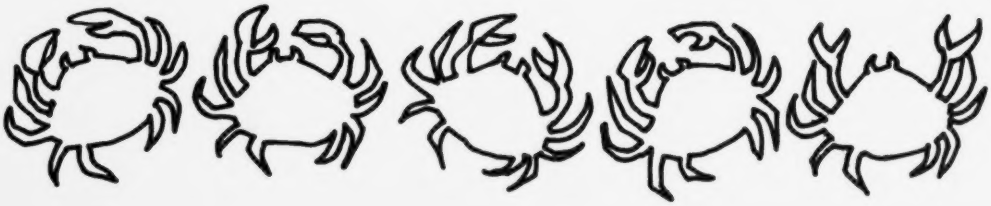
5th 2nd 4th 3rd 1st



5th 4th 2nd 1st 3rd



4th 2nd 3rd 1st 5th

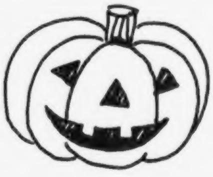
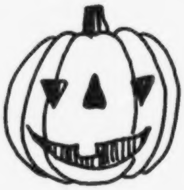
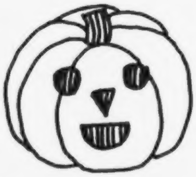
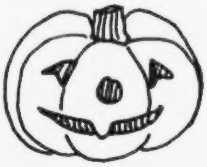


Ordinals - Review

Draw a line to the correct picture for each ordinal number.
See Teacher's Manual, Unit 15.

Name _______________

1st 2nd 3rd 4th 5th

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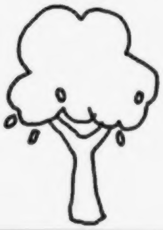
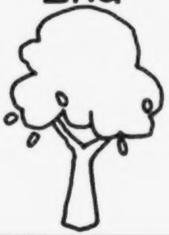
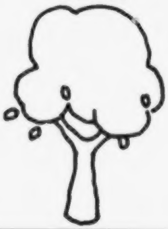
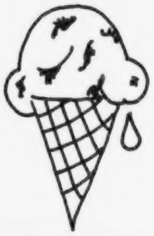
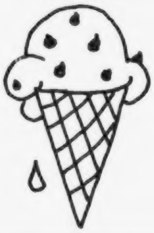
1st 2nd 3rd 4th 5th

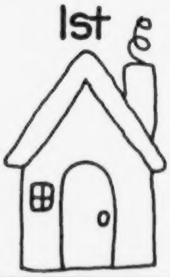
_______ _______

1st 2nd 3rd 4th 5th

_______ _______ _______

1st 2nd 3rd 4th 5th



_______ _______ _______ _______

1st 2nd 3rd 4th 5th

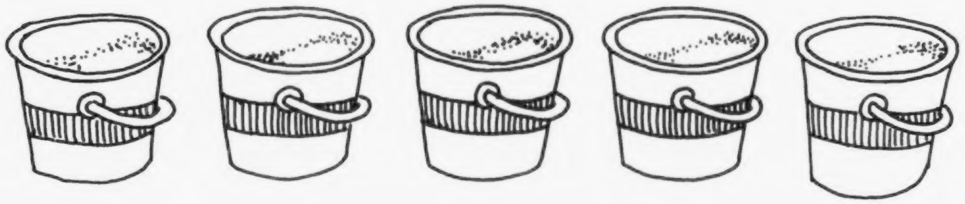
_______ _______ _______ _______ _______

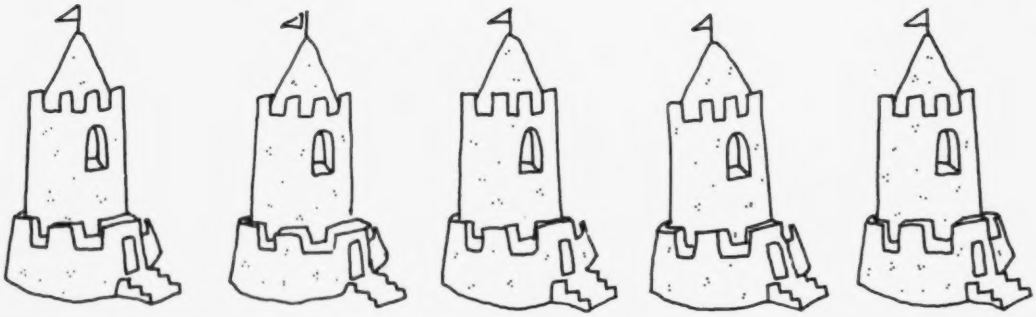
Ordinals-Review

Draw correct pictures to complete each row. Last row - child's choice. See Teacher's Manual, Unit 15.

Name ______________

123





1st

2nd

3rd

4th

5th

1st

2nd

3rd

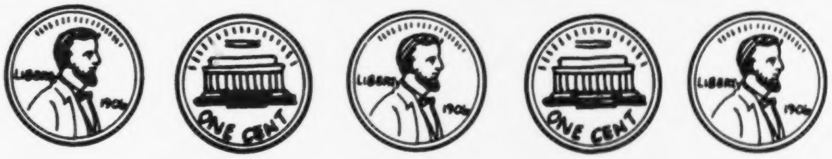
4th

5th

Ordinals - Review

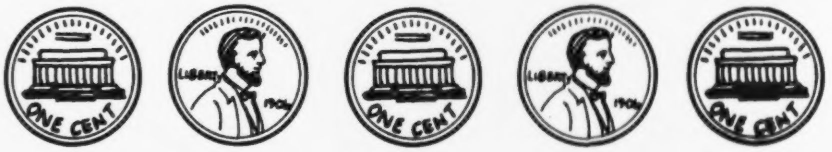
Cut and paste correct ordinal numbers. See Teacher's Manual, Unit 15.

124 Name ______________________



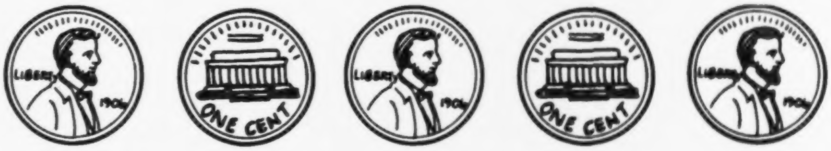
1 2 3 4 5

5 ¢



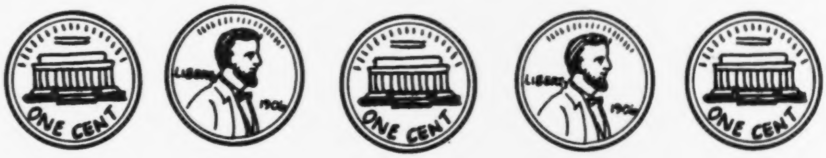
6 ___ ___ ___ ___

10 ¢



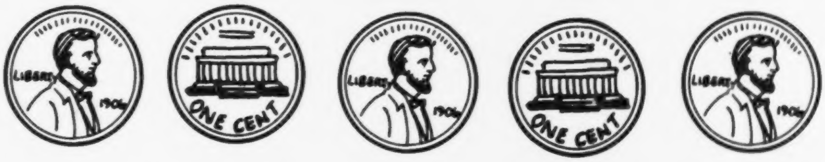
___ ___ ___ ___ ___

15 ¢



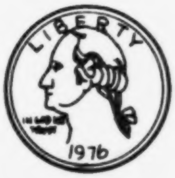
___ ___ ___ ___ ___

20 ¢



___ ___ ___ ___ ___

25 ¢



________ ¢

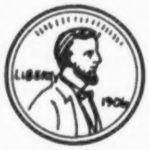
Counting by 1's and 5's Count pennies by ones and 5's to 25. Write numbers under pennies and trace number on lines. Stress that 25 pennies equals a quarter. Important - Sing Astra's Song and discuss Astra. Use appropriate Unit 16 activities with all lessons.

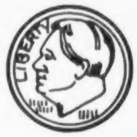
Name ______________________

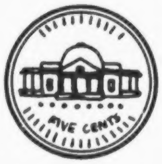
125

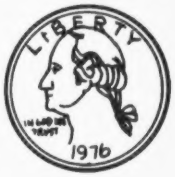
Quarters 25¢	Dimes 10¢

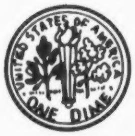
Pennies 1¢	Nickels 5¢

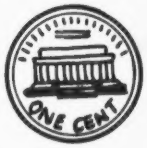

LIBERTY
1906

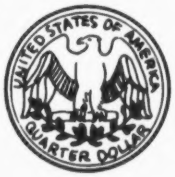


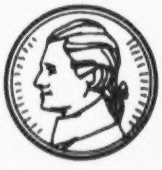


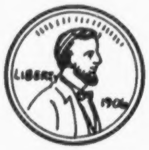

LIBERTY
IN GOD WE TRUST
1976

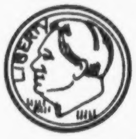

UNITED STATES OF AMERICA
ONE DIME

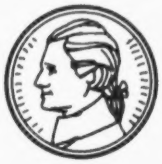


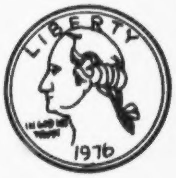

UNITED STATES OF AMERICA
QUARTER DOLLAR




LIBERTY
1906



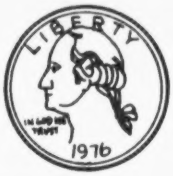


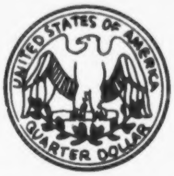

LIBERTY
IN GOD WE TRUST
1976

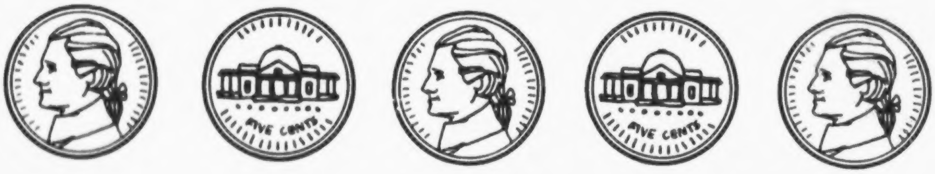
Coin Recognition

Cut and paste coins in proper box.
See Unit 16, Teacher's Manual.

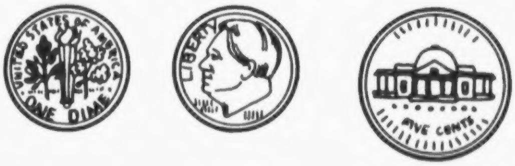
126 Name ________________________

25 ¢ 
LIBERTY
IN GOD WE TRUST
1976

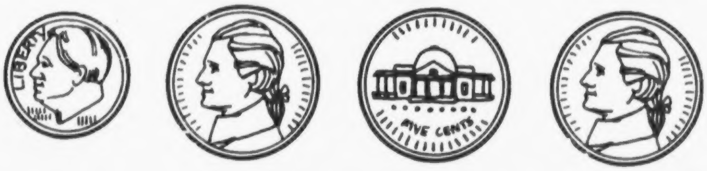
25 ¢ 
UNITED STATES OF AMERICA
QUARTER DOLLAR


FIVE CENTS
FIVE CENTS

___¢ ___¢ ___¢ ___¢ ___¢ 25¢


UNITED STATES OF AMERICA
ONE DIME
LIBERTY
FIVE CENTS

___¢ ___¢ ___¢ ______¢


LIBERTY
FIVE CENTS

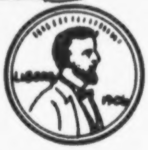
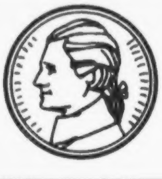
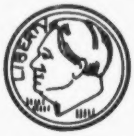
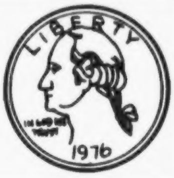
___¢ ___¢ ___¢ ___¢ ______¢

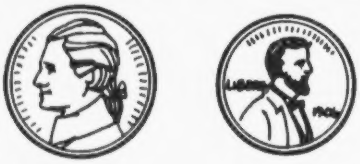
Dimes and Quarters

Discuss quarter on top of page. Count coins and discuss all are same as quarter. Write coin value on lines. Write 25¢ on lines. See Teacher's Manual, Unit 16.

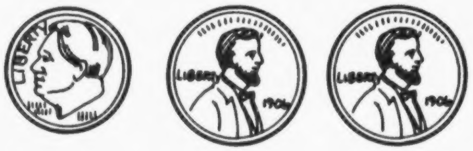
Name ______________________

127

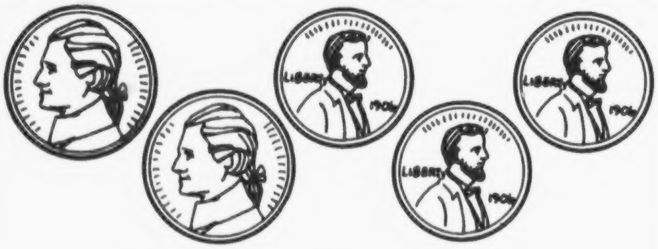
1¢ 	5¢ 	10¢ 	25¢ 



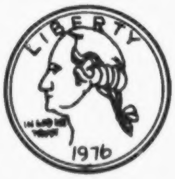
4¢ 5¢ 6¢



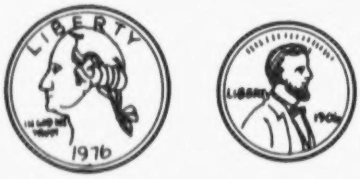
11¢ 12¢ 13¢



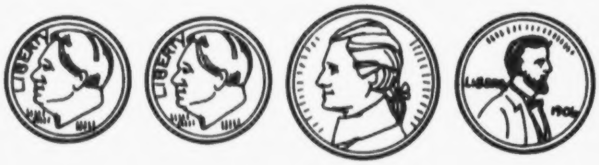
13¢ 14¢ 15¢



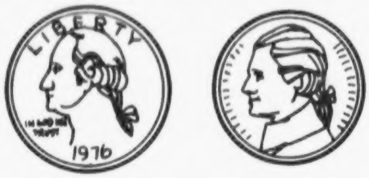
24¢ 25¢ 26¢



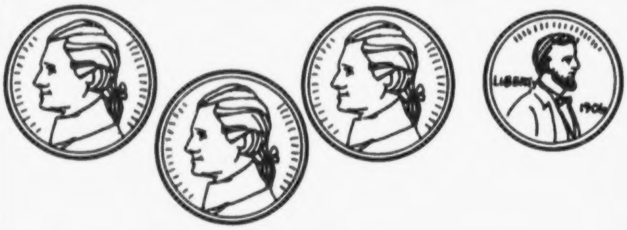
24¢ 25¢ 26¢



26¢ 27¢ 28¢



28¢ 29¢ 30¢



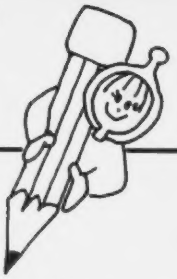
16¢ 17¢ 18¢

Counting Coins

Do page as directed activity - do together. Circle correct amount. See Teacher's Manual, Unit 16.

128

Name ______________________



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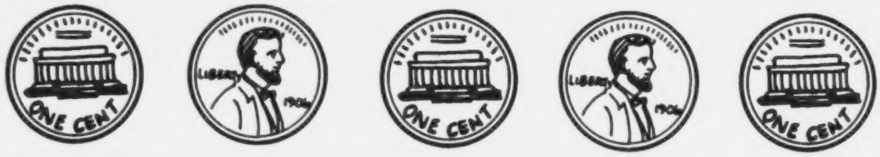
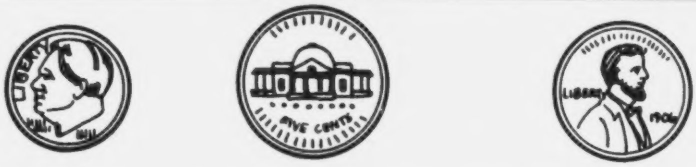


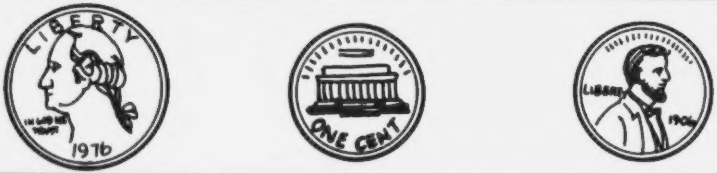
____¢ ____¢ ____¢ ____¢ ____¢ ______¢

2.



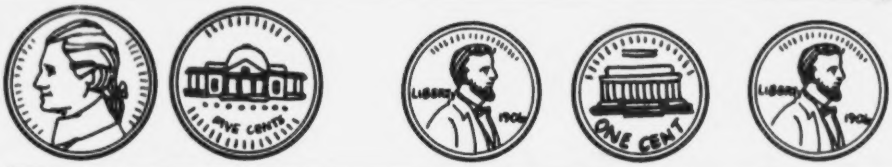
____¢ ____¢ ____¢ ______¢

3.



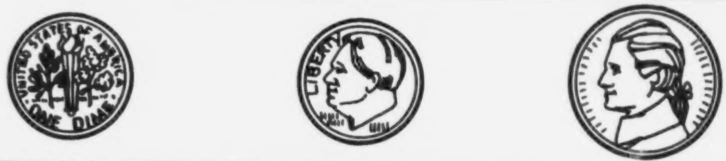
____¢ ____¢ ____¢ ______¢

4.



____¢ ____¢ ____¢ ____¢ ____¢ ______¢

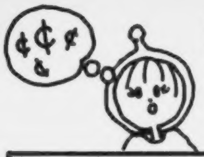
5.



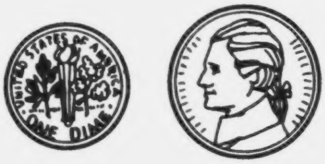
____¢ ____¢ ____¢ ______¢

Adding Coins

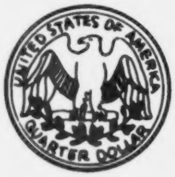
Write amount under each coin. Write total for each row.
See Teacher's Manual, Unit 16.



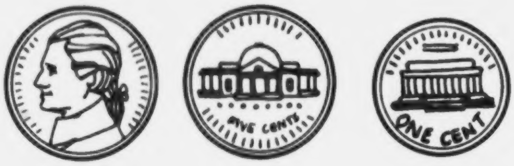
Name ______________________

1 
UNITED STATES OF AMERICA
ONE DIME

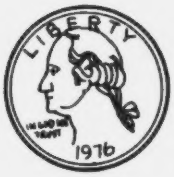
______ ¢

2 
UNITED STATES OF AMERICA
QUARTER DOLLAR
LIBERTY
1906

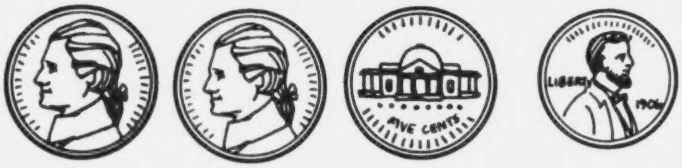
______ ¢

3 
FIVE CENTS
ONE CENT

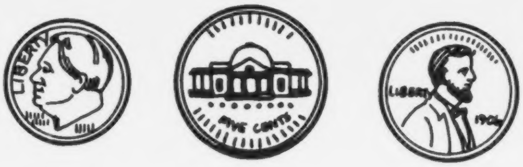
______ ¢

4 
LIBERTY
IN GOD WE TRUST
1976
FIVE CENTS

______ ¢

5 
FIVE CENTS
LIBERTY
1906

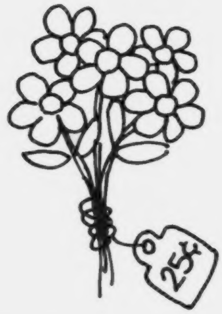
______ ¢

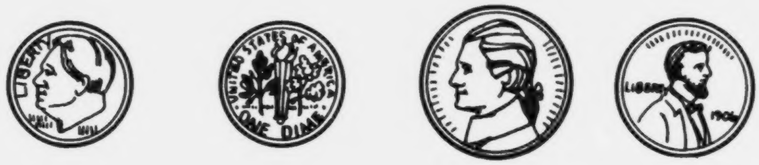
6 
LIBERTY
FIVE CENTS
LIBERTY
1906

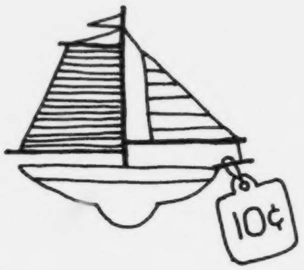
______ ¢

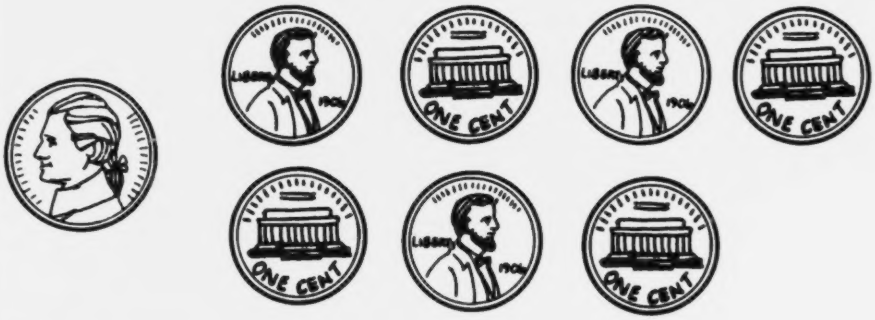
Counting Coins Count coins. Write correct number. See Teacher's Manual, Unit 16.

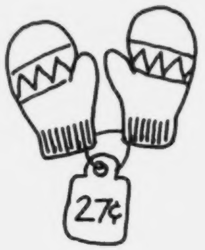
130 **Name** ______________________

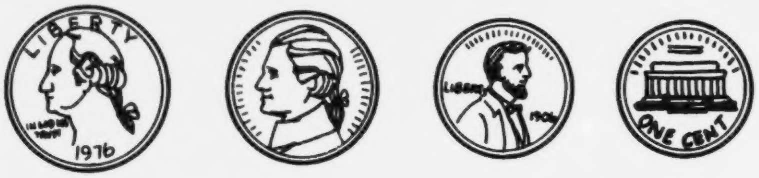


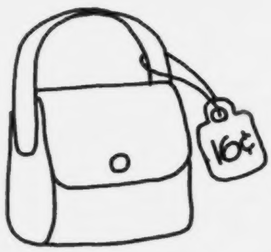

LIBERTY
UNITED STATES OF AMERICA
ONE DIME
LIBERTY

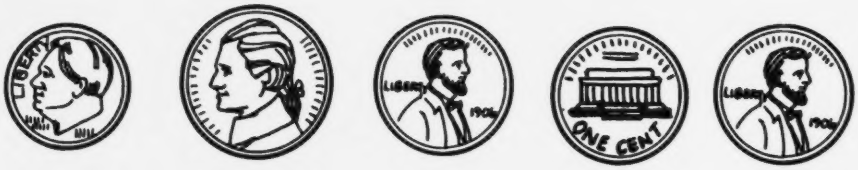



LIBERTY
ONE CENT
LIBERTY
ONE CENT
ONE CENT
LIBERTY
ONE CENT




LIBERTY
1976
LIBERTY
ONE CENT

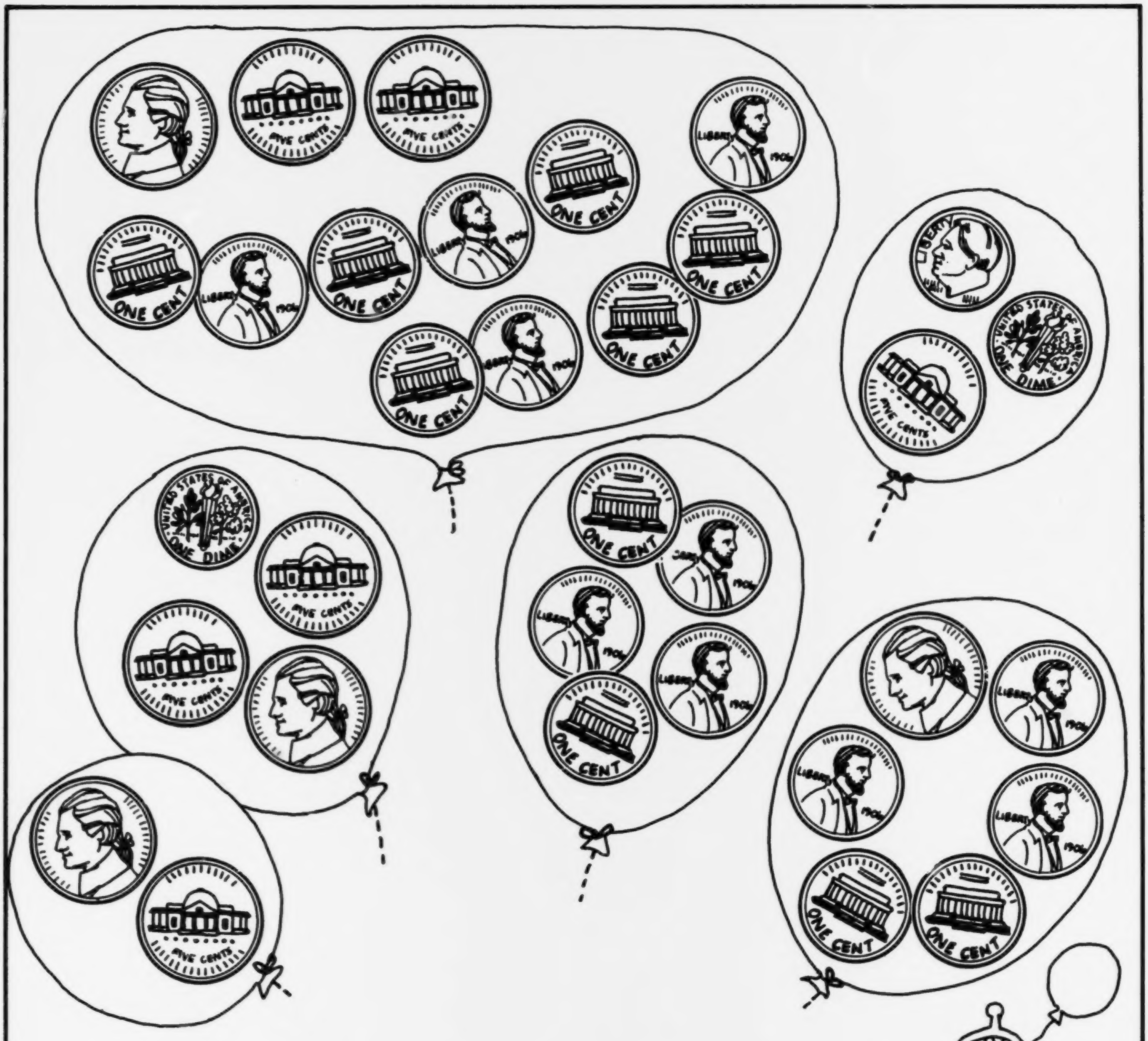


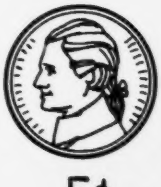

LIBERTY
LIBERTY
ONE CENT
LIBERTY

Counting Coins

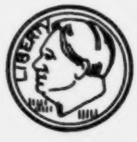
Discuss pictures. Select and circle coins for correct amount of each picture. Cross out extra coins. See Teacher's Manual, Unit 16.

Name ______________________

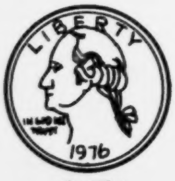




5¢



10¢



25¢

Matching Value

Draw a line from balloon string to correct coins of same amount on bottom of page. See Teacher's Manual, Unit 16.

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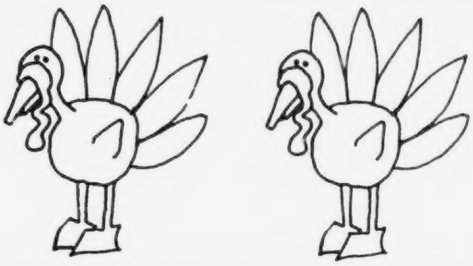
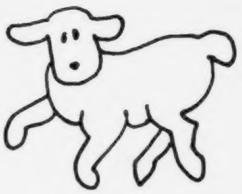
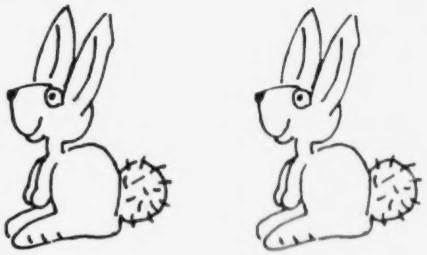
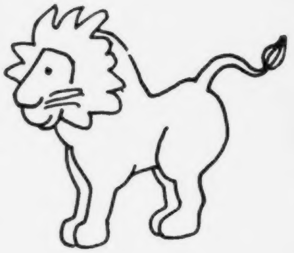
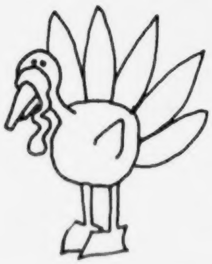
Name _______________

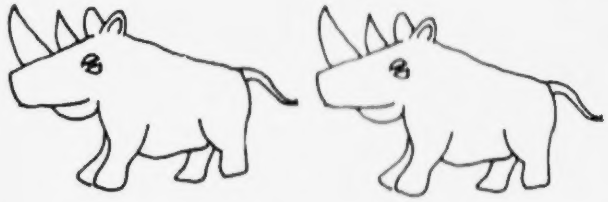


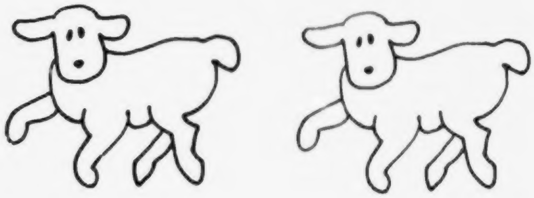


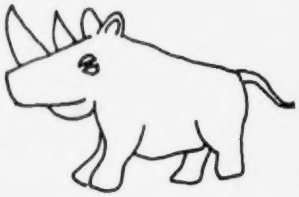


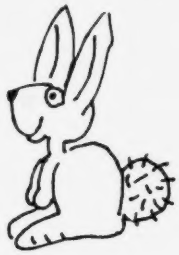


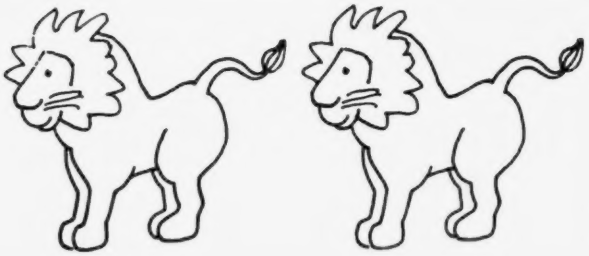












After

Cut correct picture to go after each row of pictures. Important - Discuss Astra - Sing Astra's Song. See Unit 17, Teacher's Manual.

Name ______________________

4 ______

6 ______

9 ______

1 ______

3 ______

7 ______

8 ______

11 ______

13 ______

15 ______

17 ______

21 ______

24 ______

26 ______

22 ______

29 ______

27 ______

10 ______

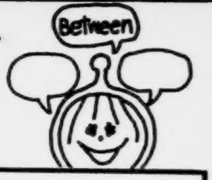
28 ______

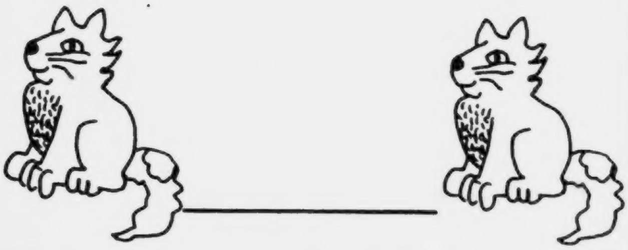
0 ______

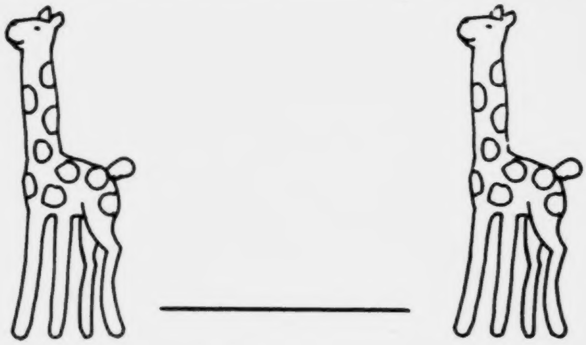
After

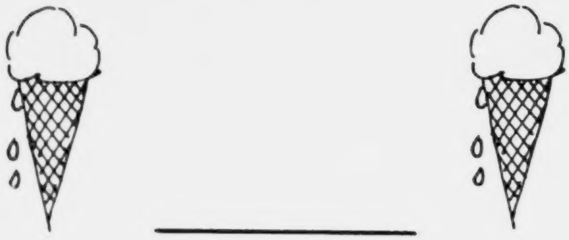
Write number which comes after each number. See Teacher's Manual, Unit 17.

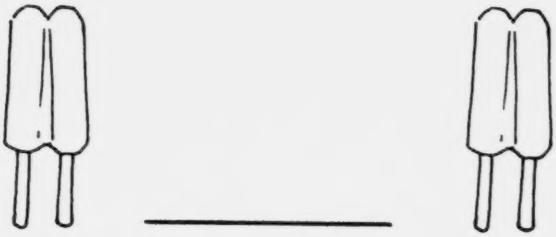
Name ______________________

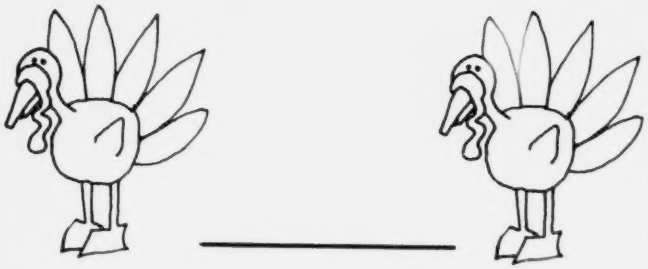


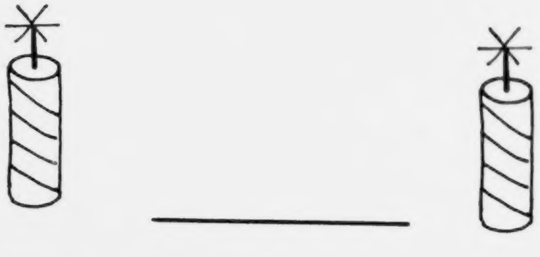






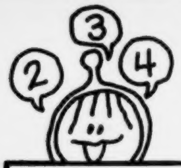






Between

Draw pictures between each pair. See Teacher's Manual, Unit 17.



Name ______________________________

2 ☐ 4	11 ☐ 13
25 ☐ 27	28 ☐ 30
6 ☐ 8	14 ☐ 16
7 ☐ 9	13 ☐ 15
22 ☐ 24	26 ☐ 28

26

23

3

15

7

12

29

8

14

27

Between

Cut and paste correct number between each two numbers. See Teacher's Manual, Unit 17.

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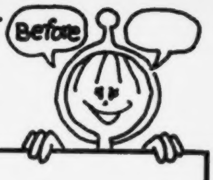
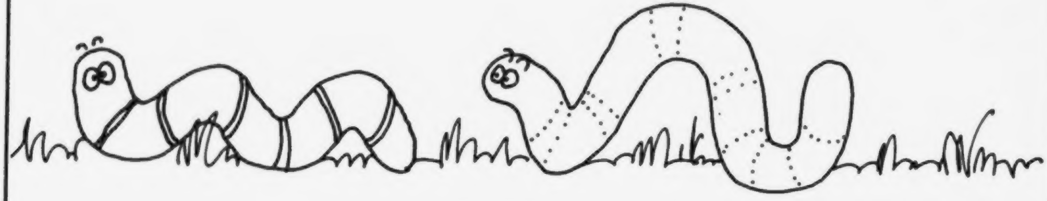
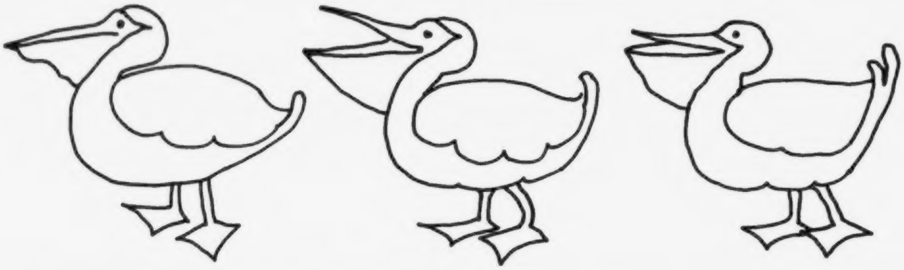
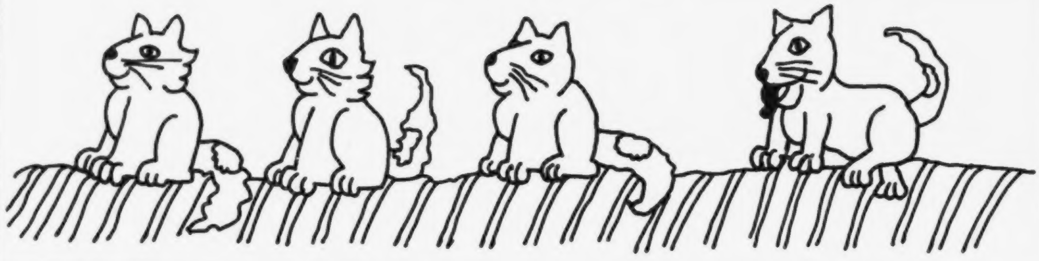
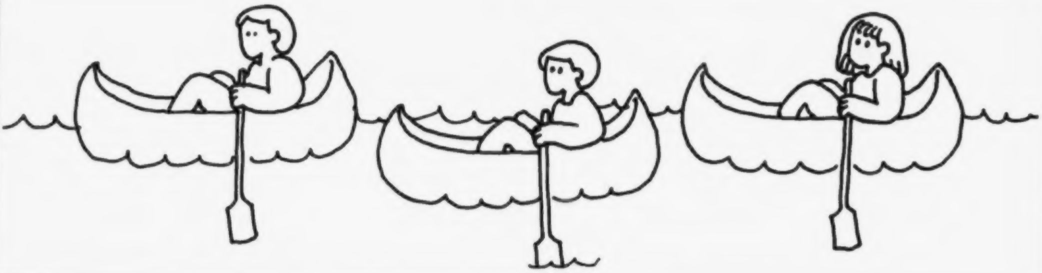
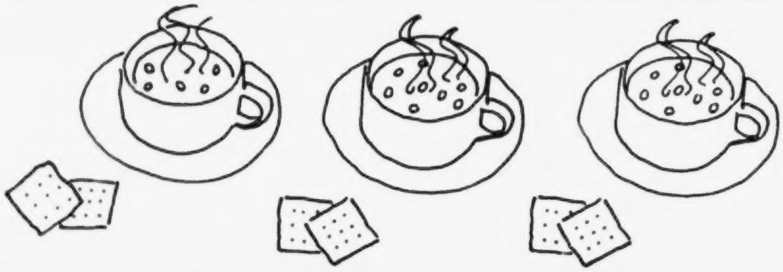
Name ______________________________



Before

Cut and paste correct number between each two numbers. See Teacher's Manual, Unit 17.

Name ____________________

____ 3

____ 10

____ 18

____ 6

____ 24

____ 9

____ 30

____ 27

____ 15

____ 22

Before Write the number that comes before each number. See Teacher's Manual, Unit 17.

138 Name ______________________

1, 2, ___, ___, 5,

6, ___, 8, 9, ___,

___, 12, ___, 14, 15,

___, ___, 18, ___, 20,

21, ___, ___, ___, 25,

___, 27, ___, ___, 30.

Number Sequence Fill in the missing number. See Teacher's Manual, Unit 17.

Name ______________________

1, ___, 3, 4, ___,

6, ___, 8, ___, ___,

11, 12, ___, 14, ___,

___, 17, 18, 19, ___,

21, ___, 23, 24, 25,

___, ___, ___, 29, 30,

___.

Number Sequence Fill in the missing number. See Teacher's Manual, Unit 17.

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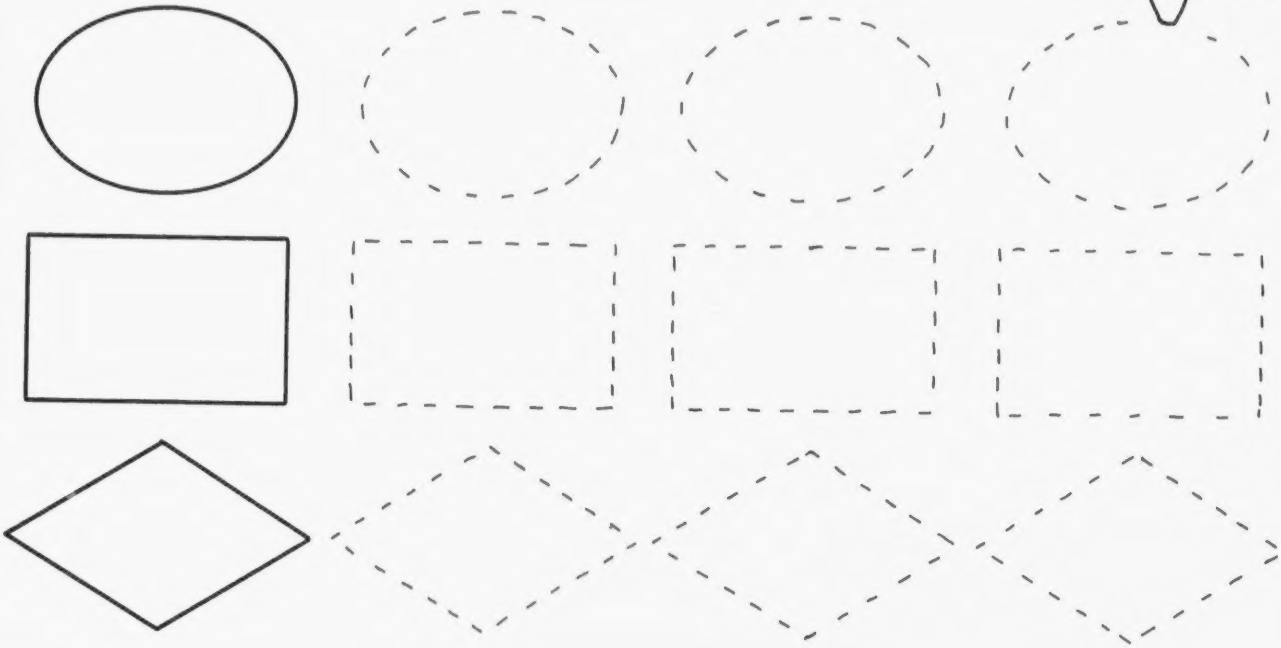
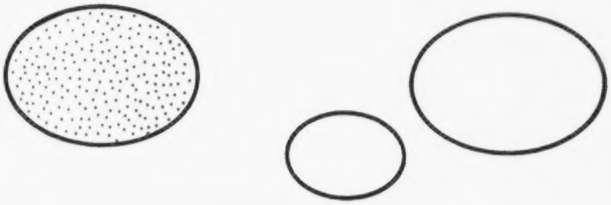
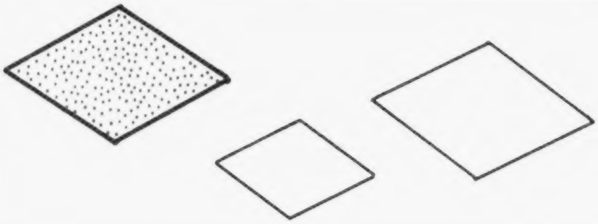
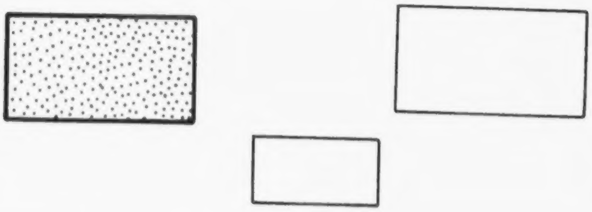
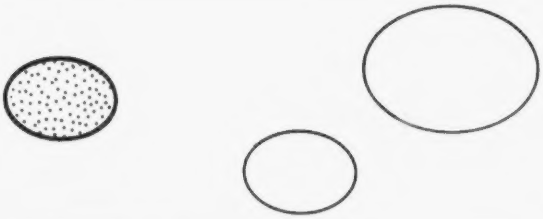
Name ________________________

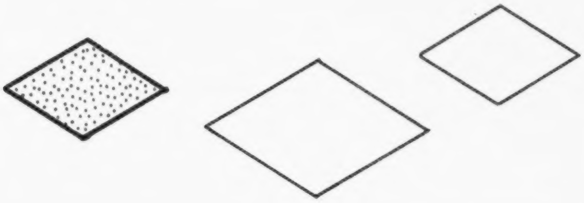


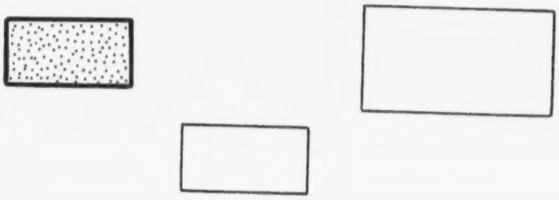








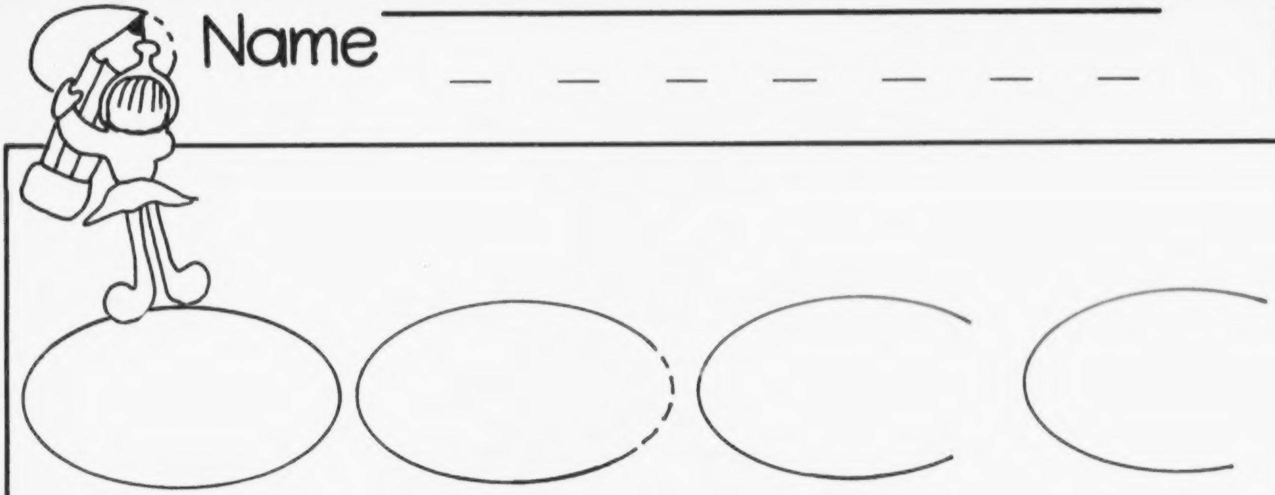


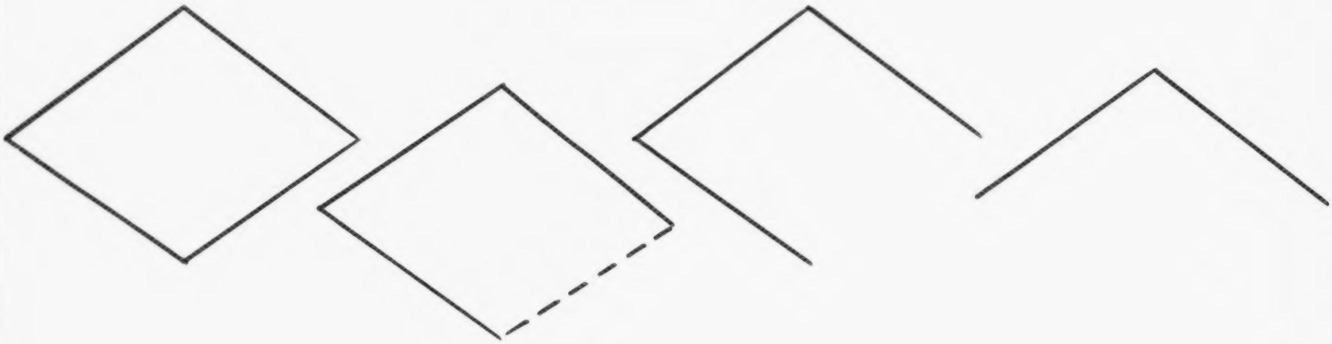


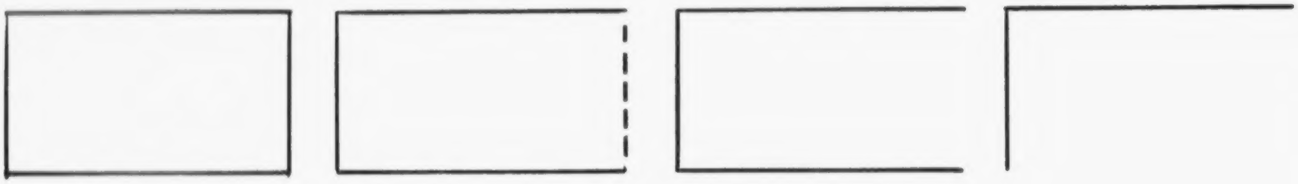
Shape recognition

Top - Trace, color, and name shapes. Color shape that matches shaded shape. Bottom - name shape in box. Important - Discuss Astra. Sing Unit 18 songs.

Name ______________________



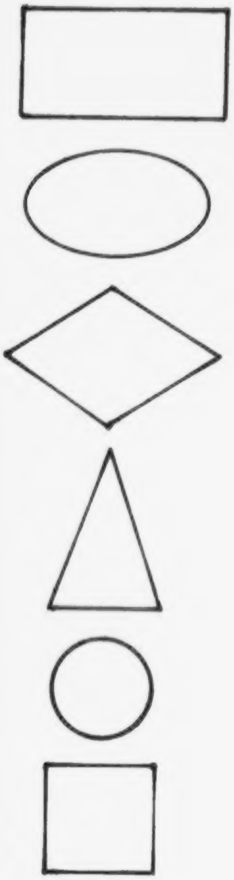


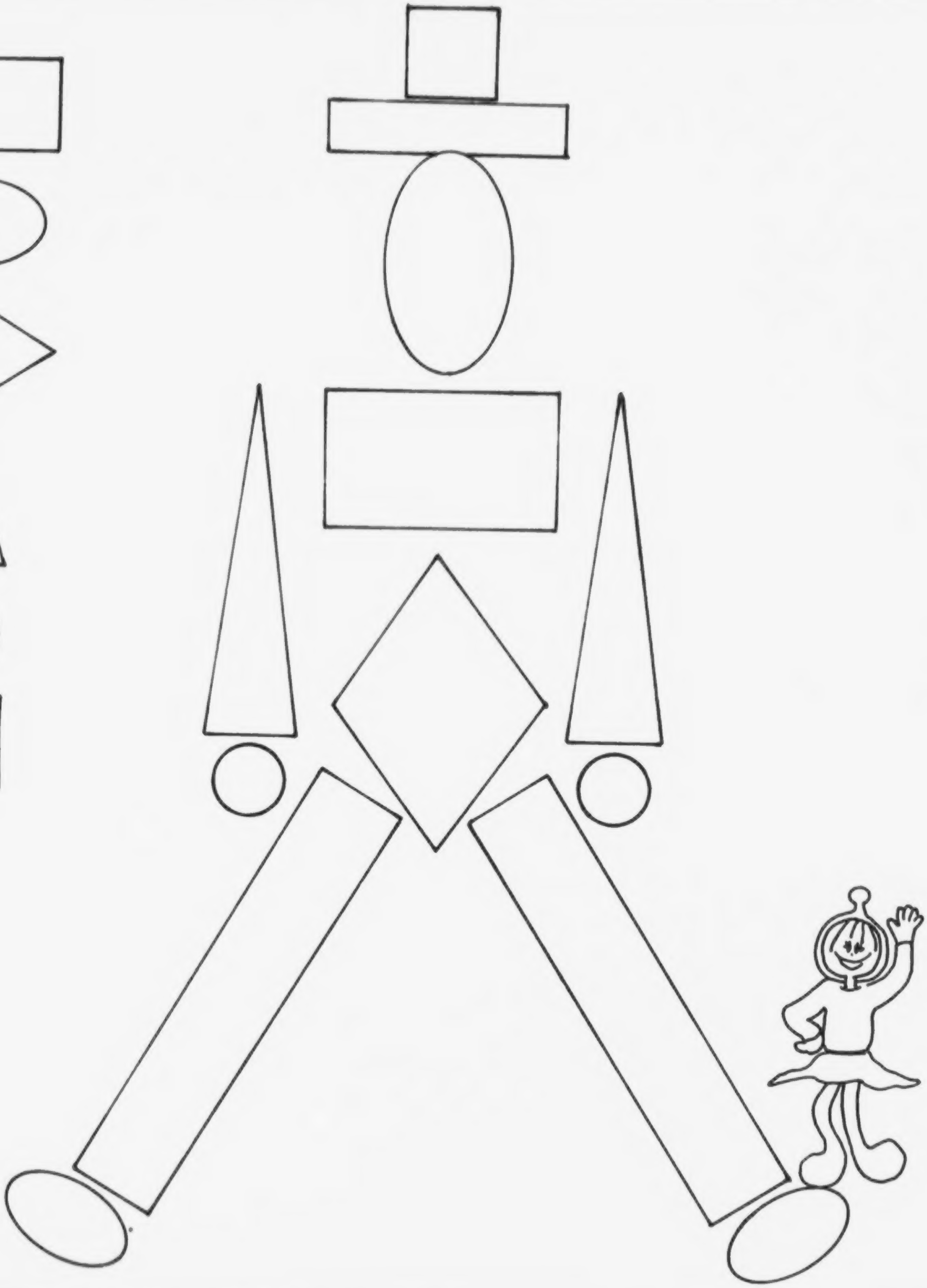


Shape recognition - Visual Closure

Complete shapes.
See Unit 18 Teacher's Manual.

142 Name ________________

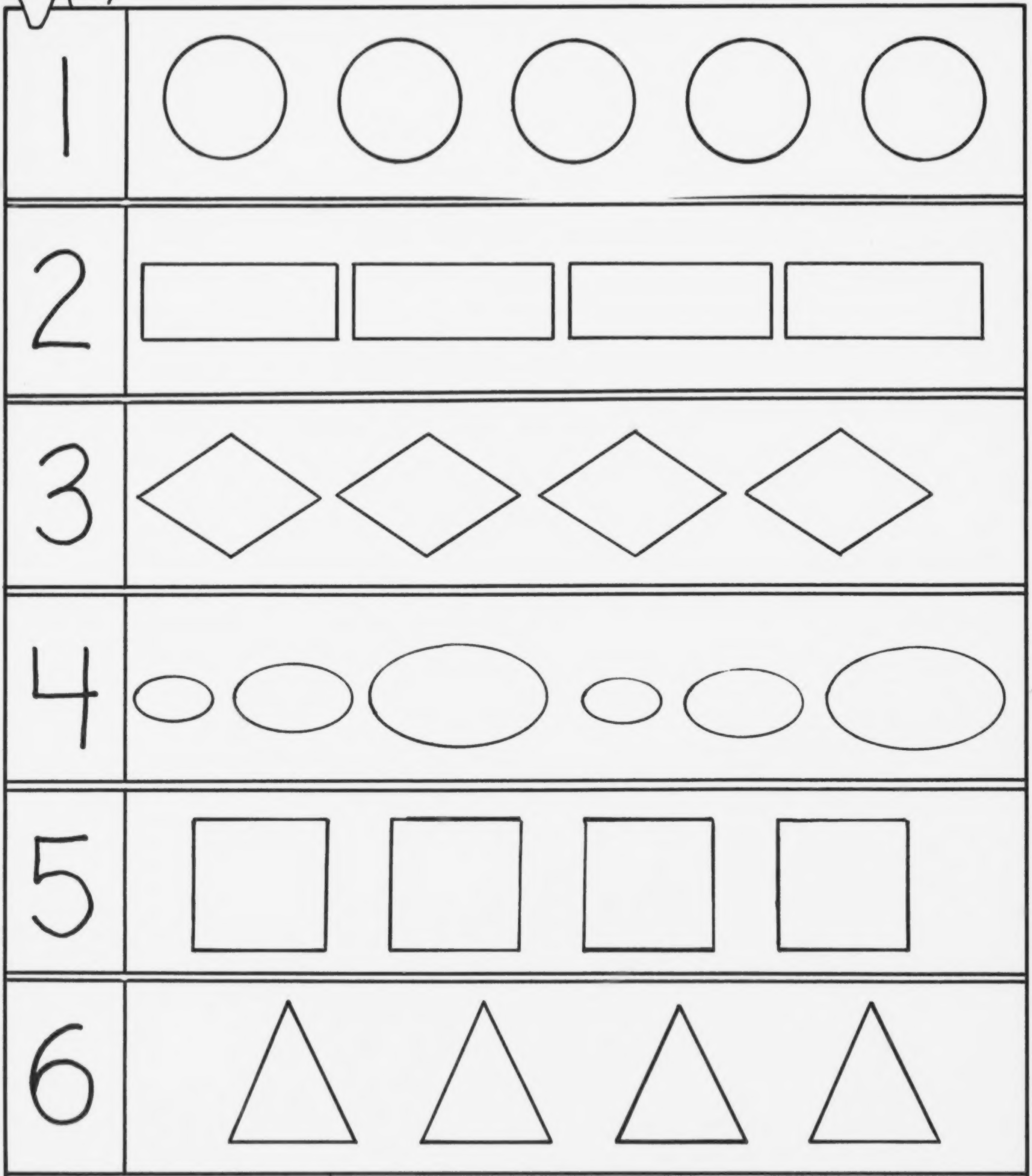




Shape recognition

Name and color key shapes six different colors. Then use key for coloring man. Rename shapes.
See Unit 18 Teacher's Manual.

Name ______________________



shape recognition

Establish coloring pattern for each row (i.e., red, green, red, green, etc.). Name shapes. See Unit 18 Teacher's Manual.

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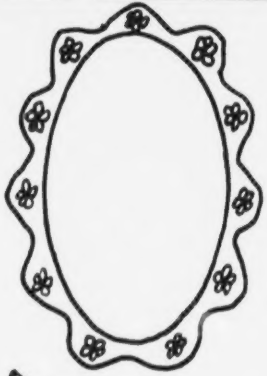
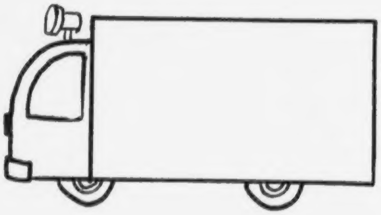
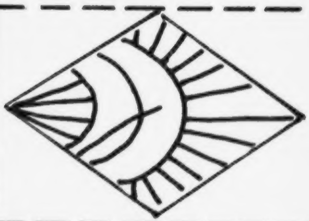
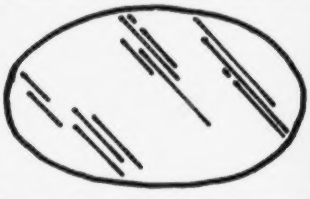
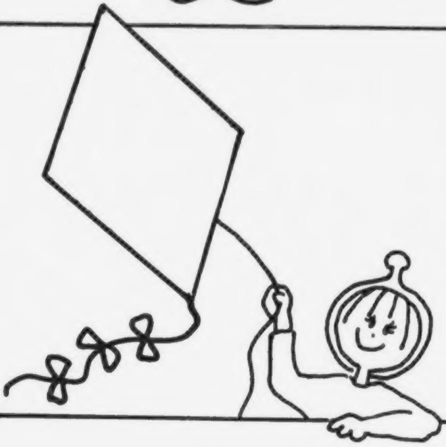
Name ______________________

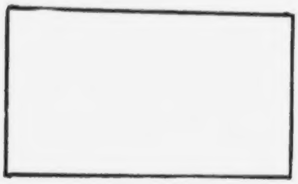


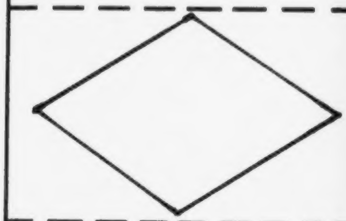


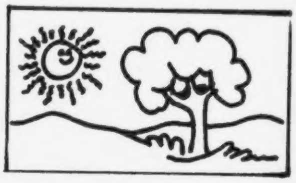


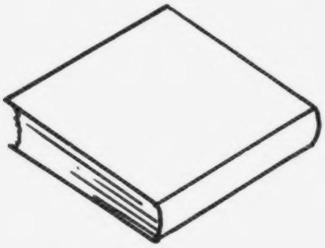


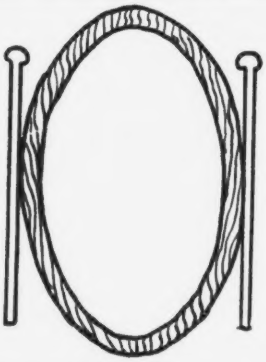


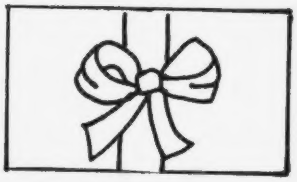


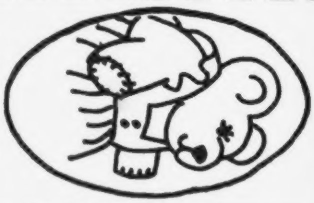


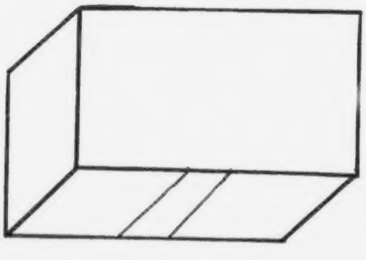


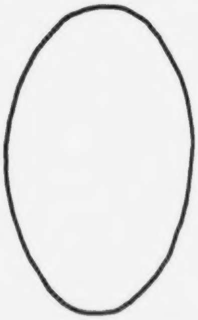


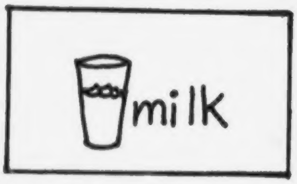


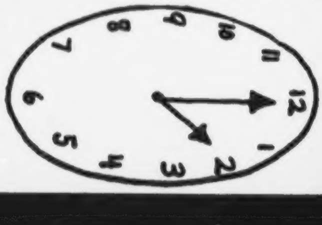








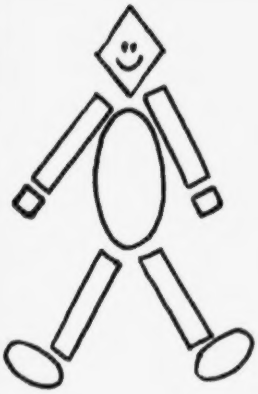


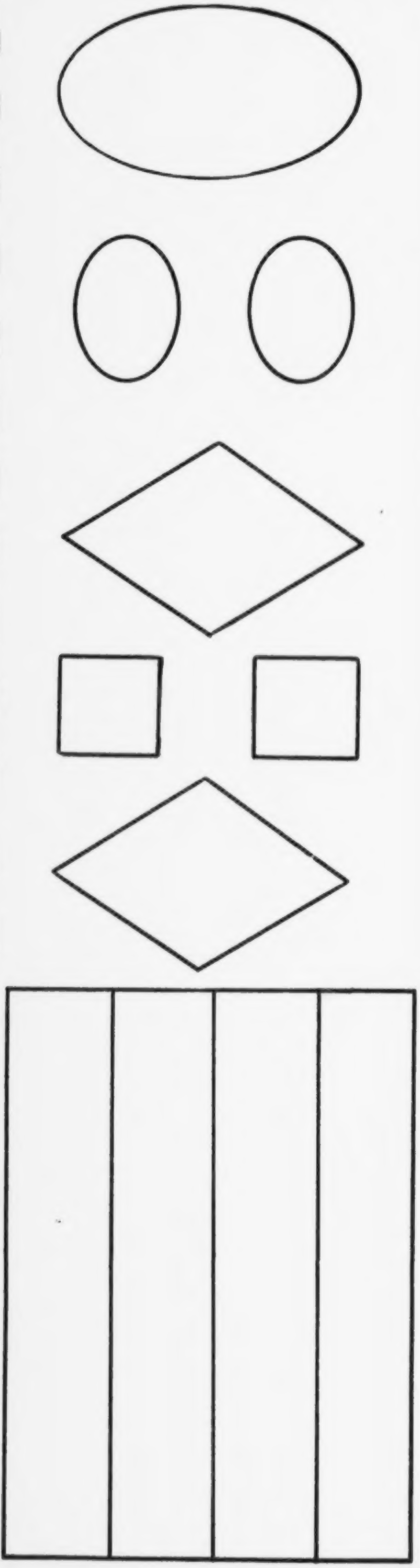

12
1
2
3
4
5
6
7
8
9
10
11

Shape recognition

Cut and paste picture to match shapes. Name shapes. See Unit 18 Teacher's Manual.

Name ______________________





Shape recognition

Name shapes. Cut and paste to form various creative pictures. Have fun! See Unit 18 Teacher's Manual.

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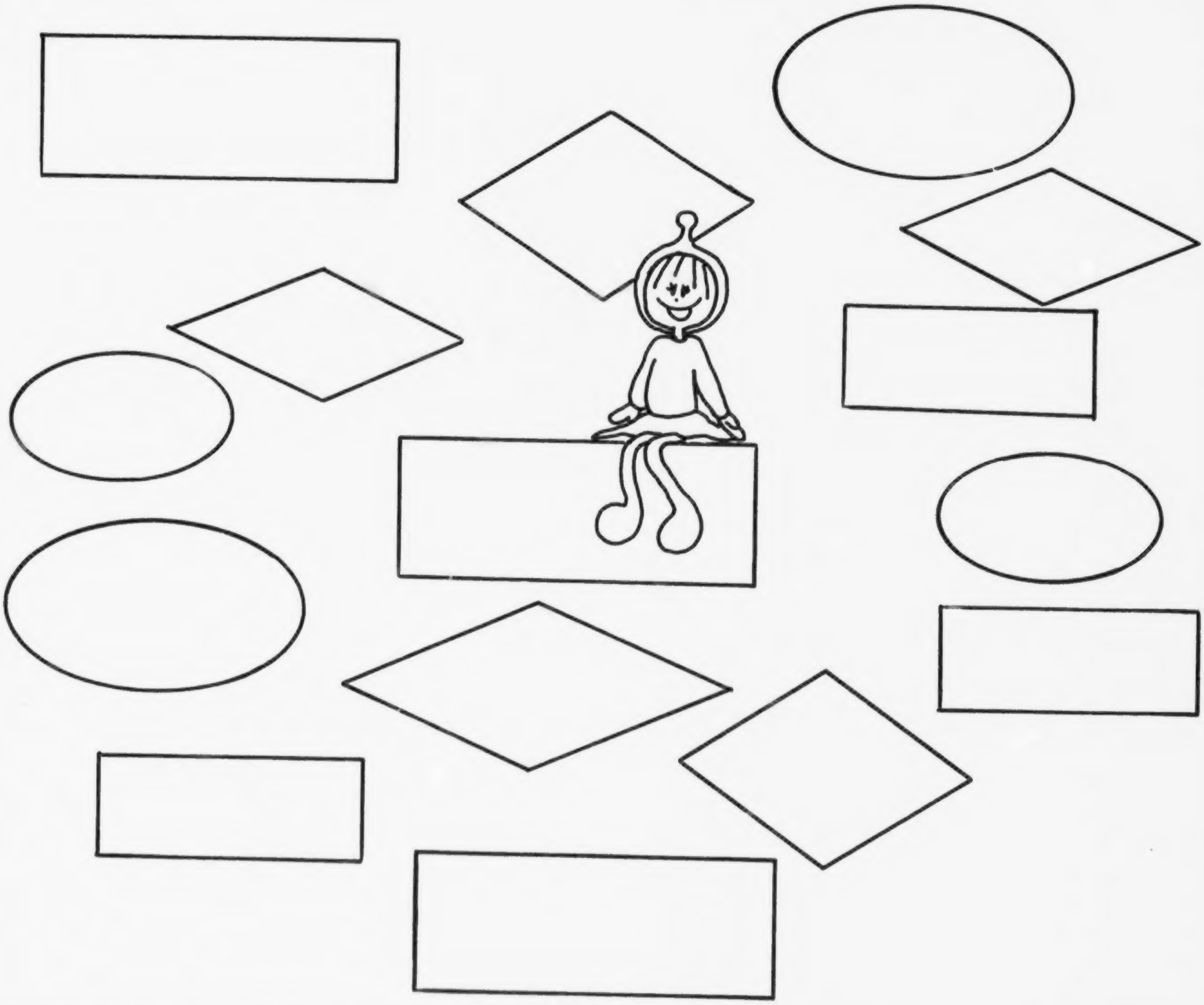
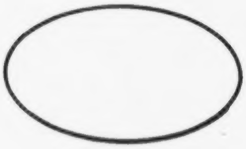
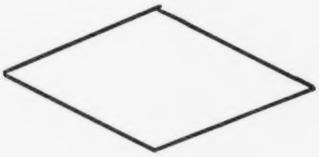
Name ______________________



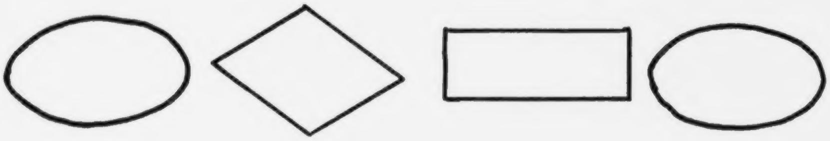


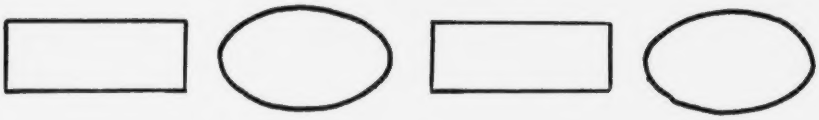


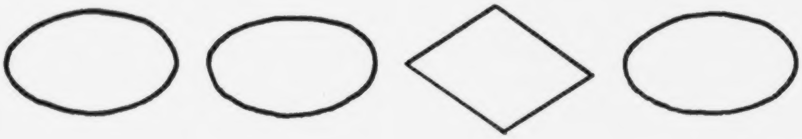
Shape recognition

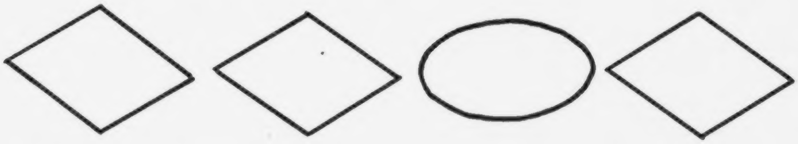
Count and write how many of each shape.
See Unit 18 Teacher's Manual.

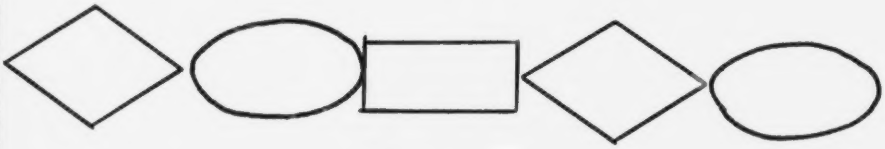
Name ________________________

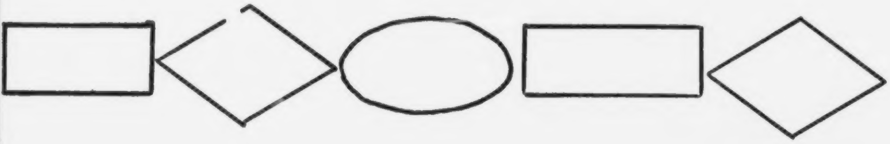


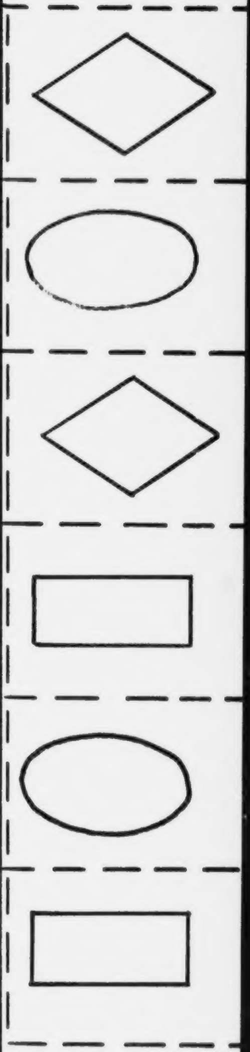












Shape recognition

Identify pattern orally. Cut and paste shapes to complete pattern. See Unit 18 Teacher's Manual.

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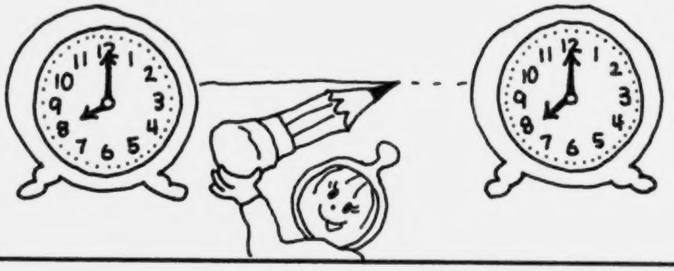
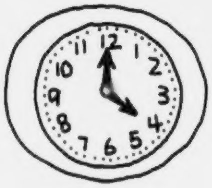
Name ___________________

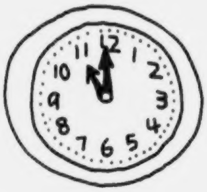
8 o'clock



8 o'clock

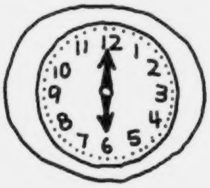
4 o'clock

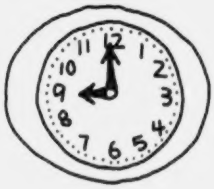




____ o'clock

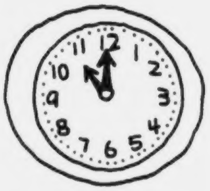
6 o'clock

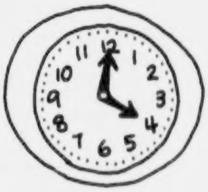




____ o'clock

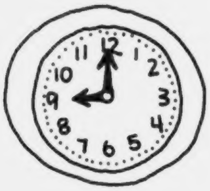
11 o'clock

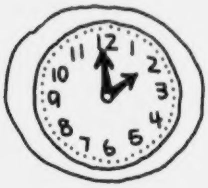




____ o'clock

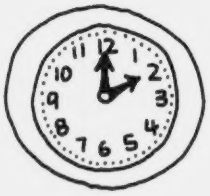
9 o'clock

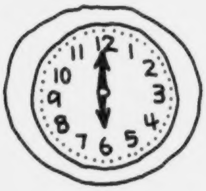




____ o'clock

2 o'clock



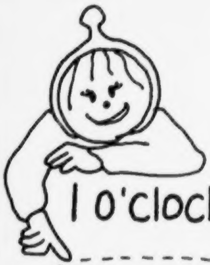


____ o'clock

Matching Time

Important - Discuss Astra. Match the clocks that are the same. Use Unit 19 Songs.

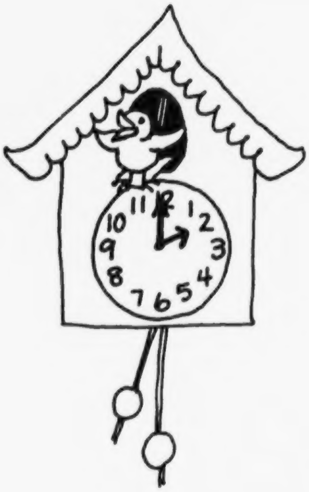
Name ________________

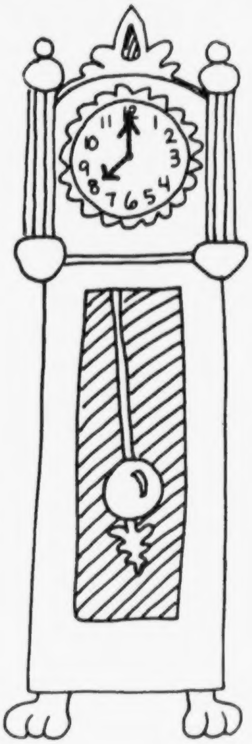


1 o'clock

[✓ 2 o'clock]

3 o'clock

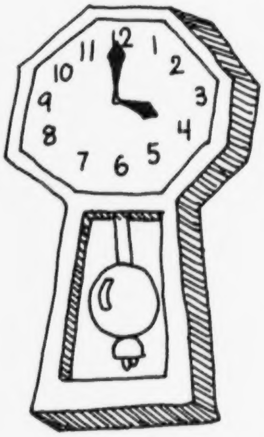




6 o'clock

7 o'clock

8 o'clock



4 o'clock

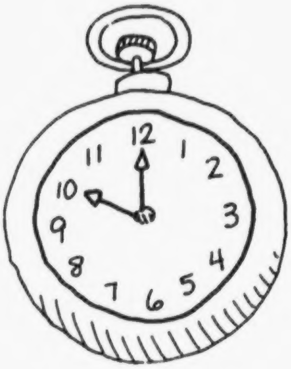
5 o'clock

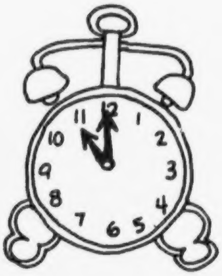
6 o'clock

9 o'clock

10 o'clock

11 o'clock





11 o'clock

12 o'clock

1 o'clock

Time Circle the correct time by each clock. See Unit 19 Teacher's Manual.

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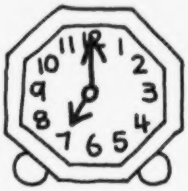
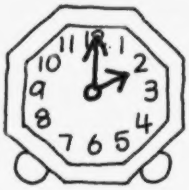
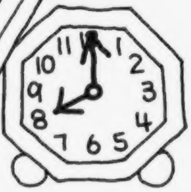
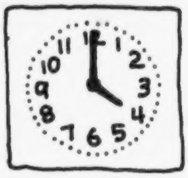
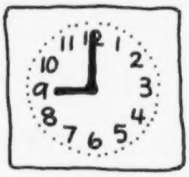
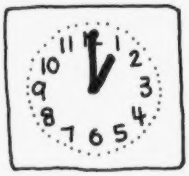
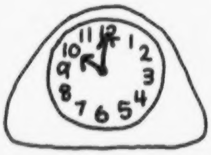
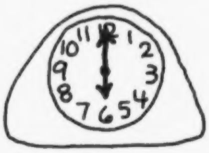
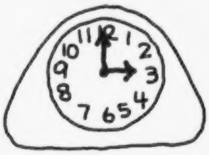
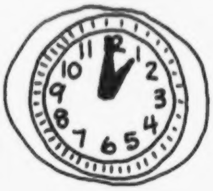
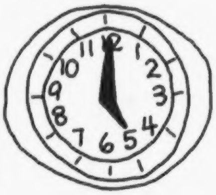
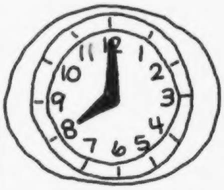
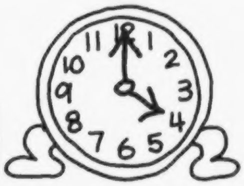
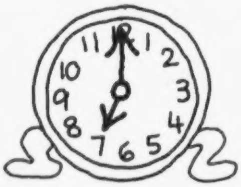
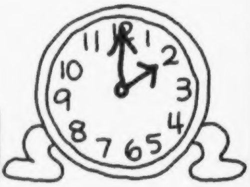
Name ______________________

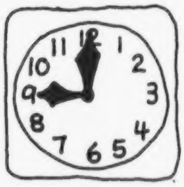
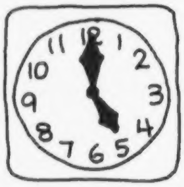
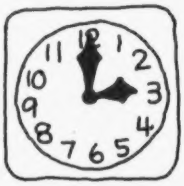
8 o'clock ☐  ☐  ☒ 

4 o'clock ☐  ☐  ☐ 

6 o'clock ☐  ☐  ☐ 

1 o'clock ☐  ☐  ☐ 

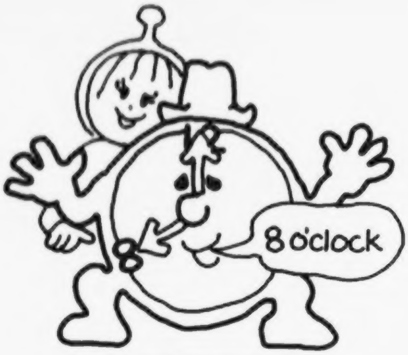
2 o'clock ☐  ☐  ☐ 

5 o'clock ☐  ☐  ☐ 

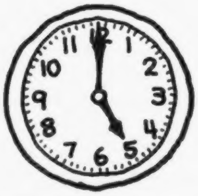
Time

Mark the clock which tells the correct time. See Unit 19 Teacher's Manual.

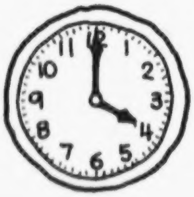
Name ____________



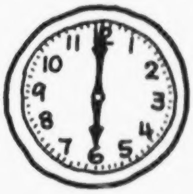
8 o'clock



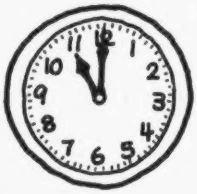
____ o'clock



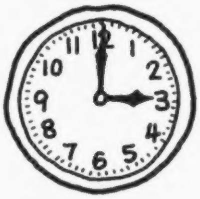
____ o'clock



____ o'clock



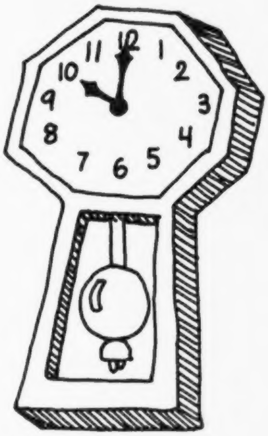
____ o'clock

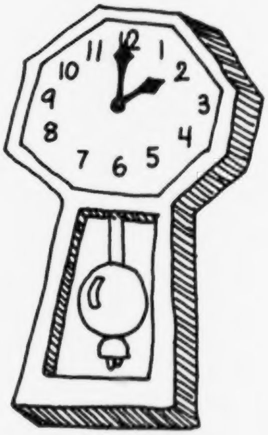


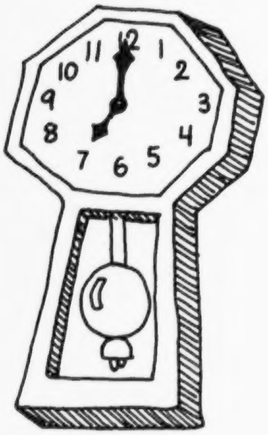
____ o'clock

Time Write the correct time on each line. See Unit 19 Teacher's Manual.

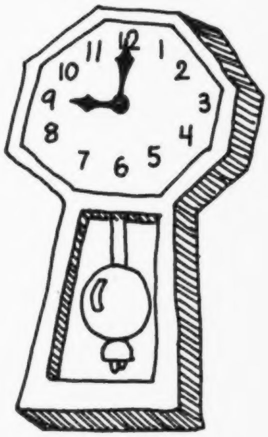
152 **Name** ______________________

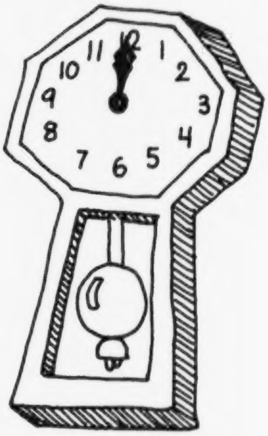


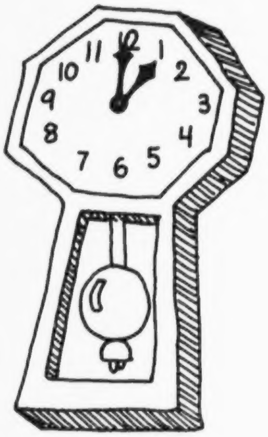




___ o'clock ___ o'clock ___ o'clock



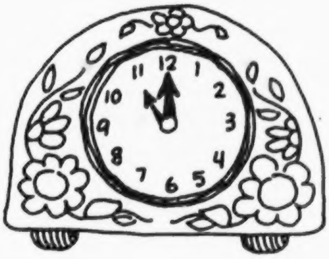




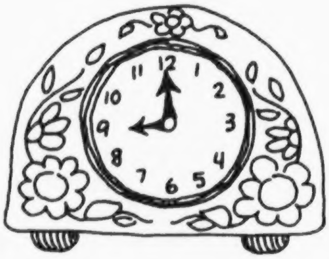
___ o'clock ___ o'clock ___ o'clock

Time Write the correct number on each line. See Unit 19 Teacher's Manual.

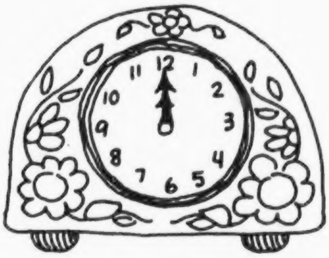
Name _______________



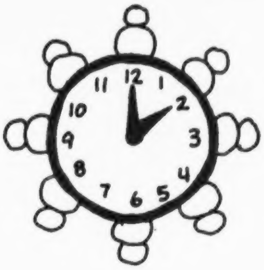
9 o'clock



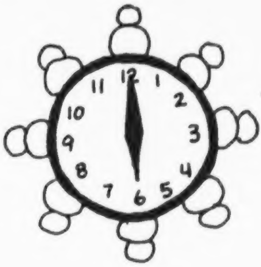
11 o'clock



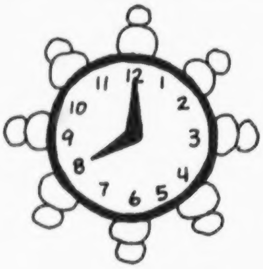
12 o'clock



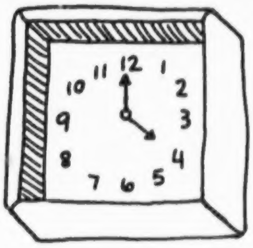
2 o'clock



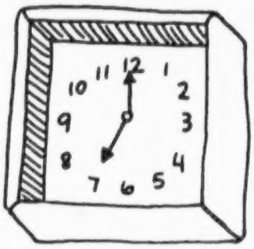
8 o'clock



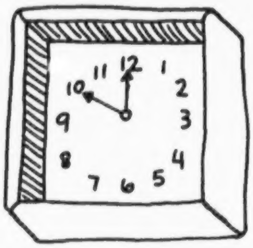
6 o'clock



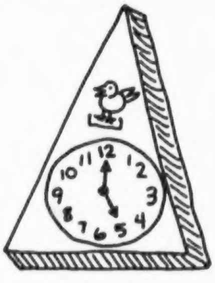
4 o'clock



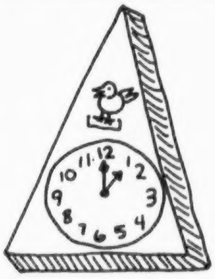
10 o'clock



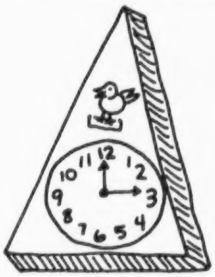
7 o'clock



1 o'clock



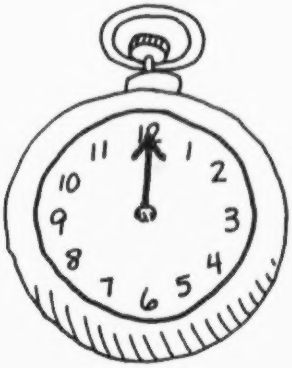
5 o'clock



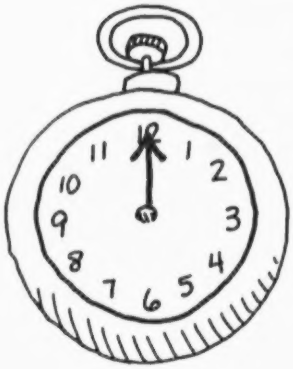
3 o'clock

Time. Draw a line from each clock to the correct time. See Unit 19 Teacher's Manual.

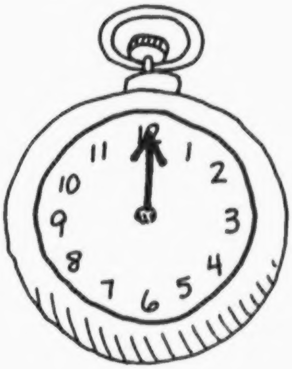
154 Name ______________________


12
1
2
3
4
5
6
7
8
9
10
11

8 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

1 o'clock


12
1
2
3
4
5
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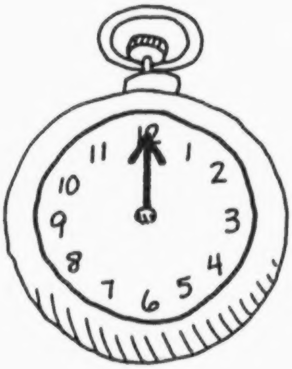
9
10
11

7 o'clock


12
1
2
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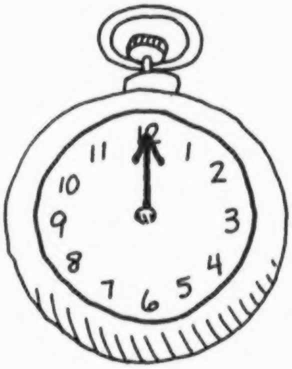
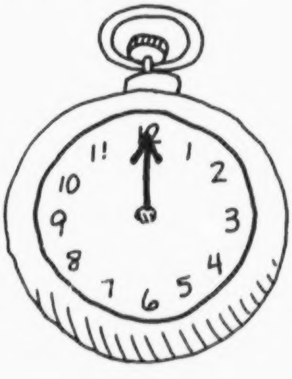
9
10
11

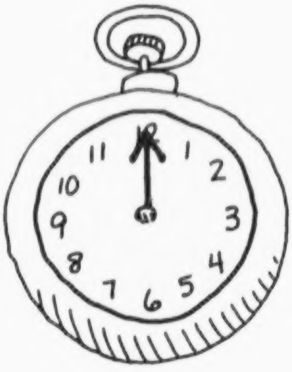
11 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

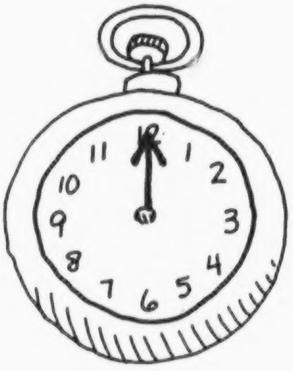
3 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

4 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

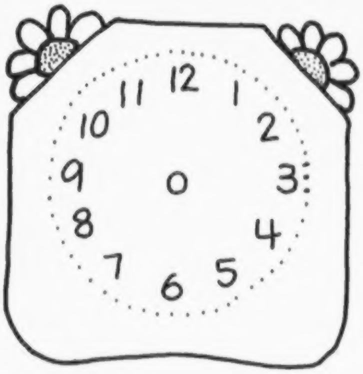
10 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

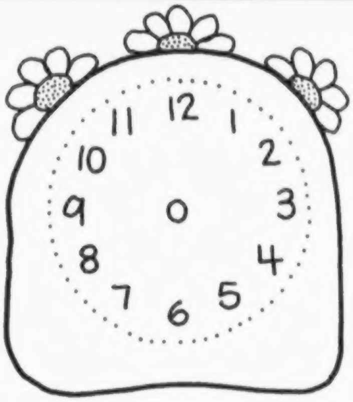
6 o'clock

Time Draw the hour hand. Stress it's being shorter than the minute hand. See Unit 19 Teacher's Manual.

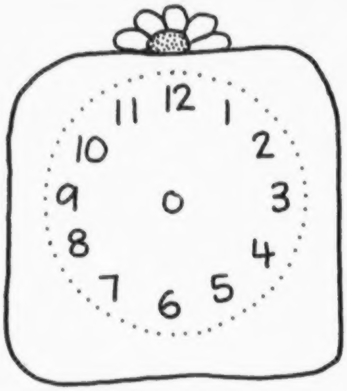
Name ______________________



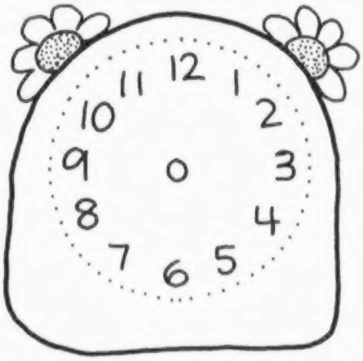
2 o clock



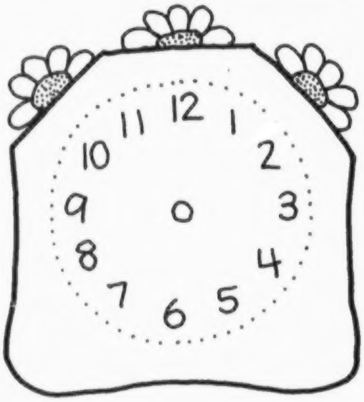
5 o'clock



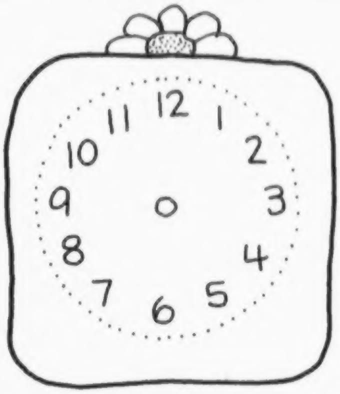
9 o'clock



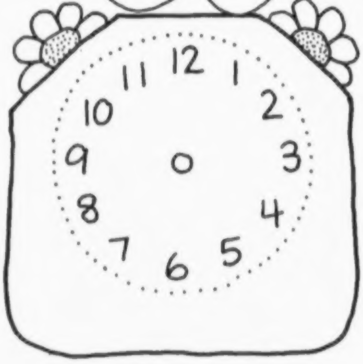
4 o'clock



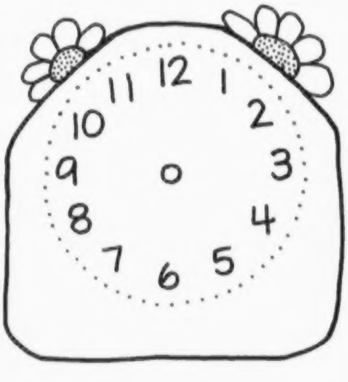
7 o'clock



11 o'clock



1 o'clock



3 o'clock

Time

Draw both hands. See Unit 19 Teacher's Manual.

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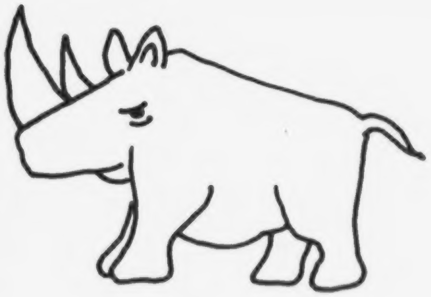
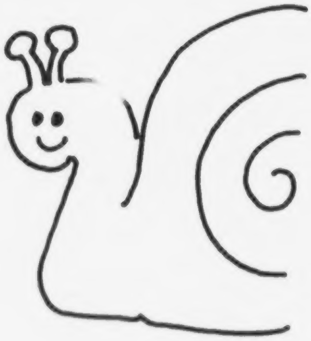
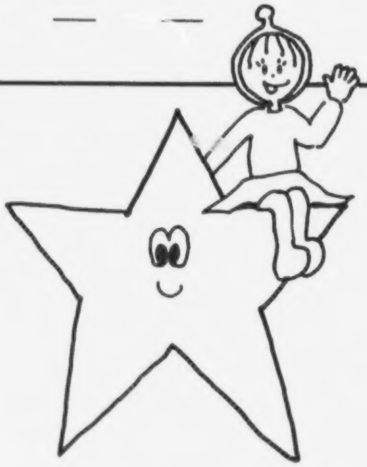
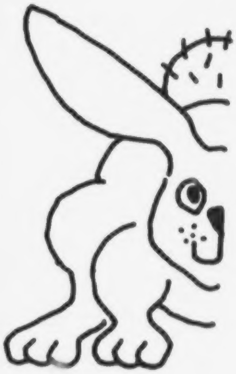
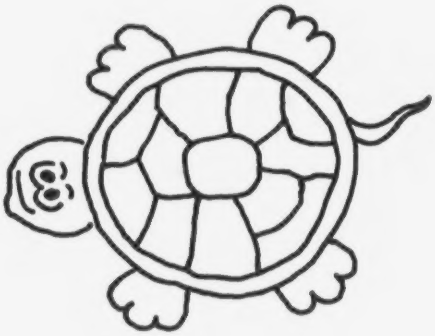
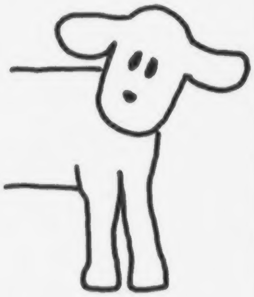
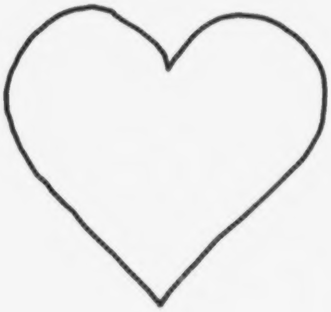
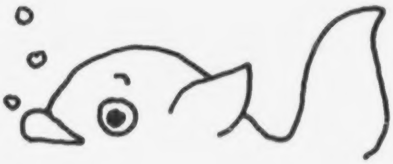
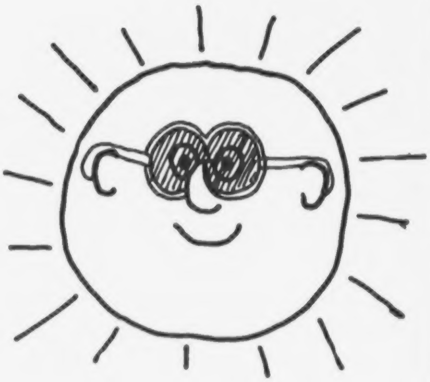
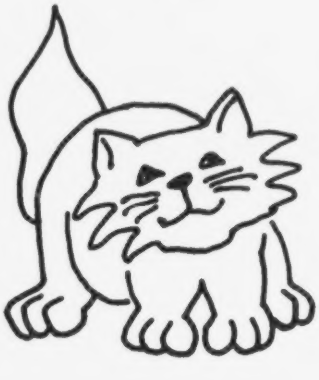
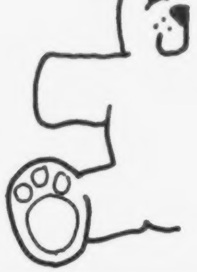
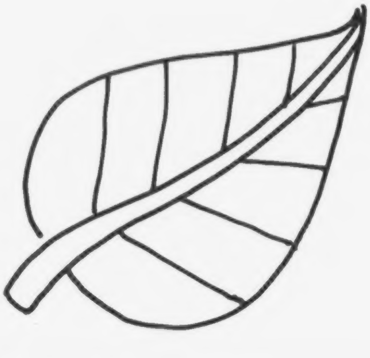
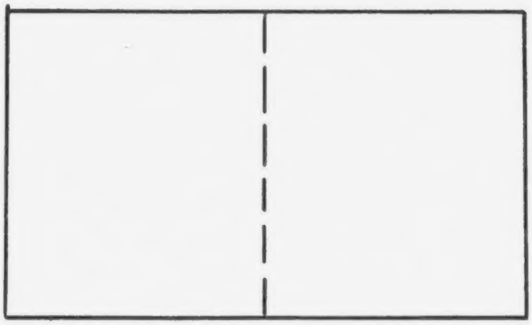
Name ______________________

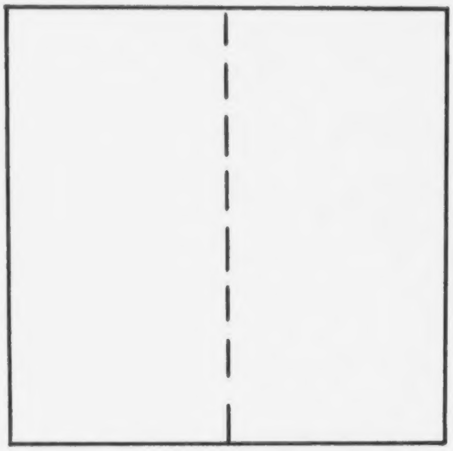













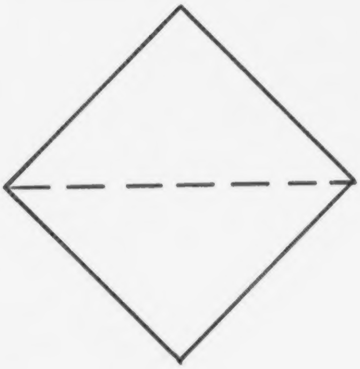
Halves

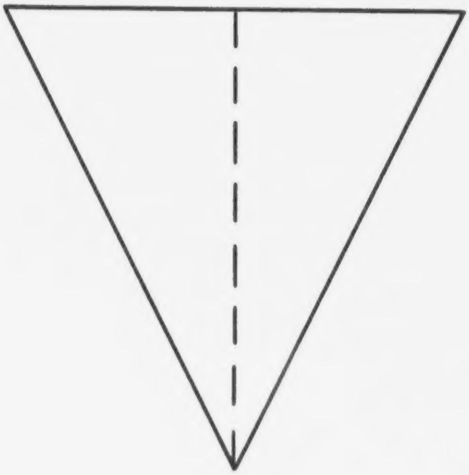
Important - Discuss Astra. See Unit 20 Songs. Color only "whole" pictures.

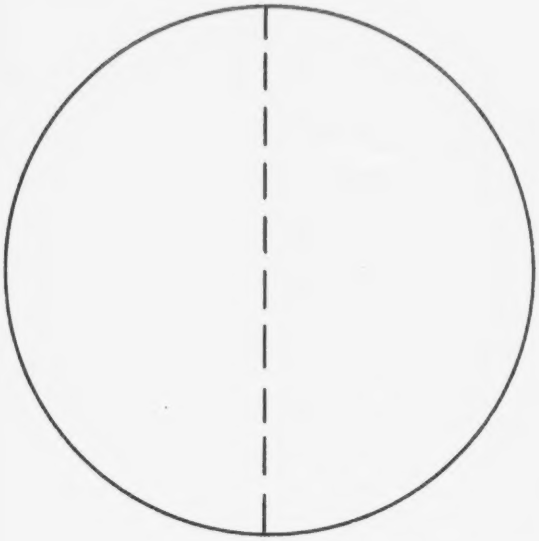
Name ______________________

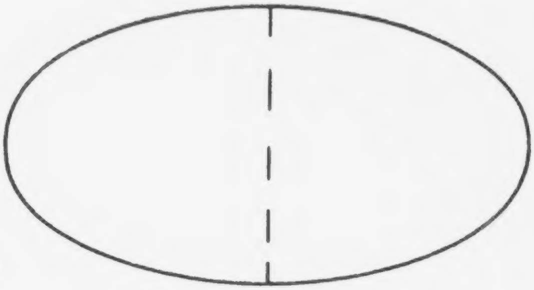












Halves

Review shape names. Trace dividing lines. Color one half of each shape. Stress whole/half. See Unit 20 Teacher's Manual.

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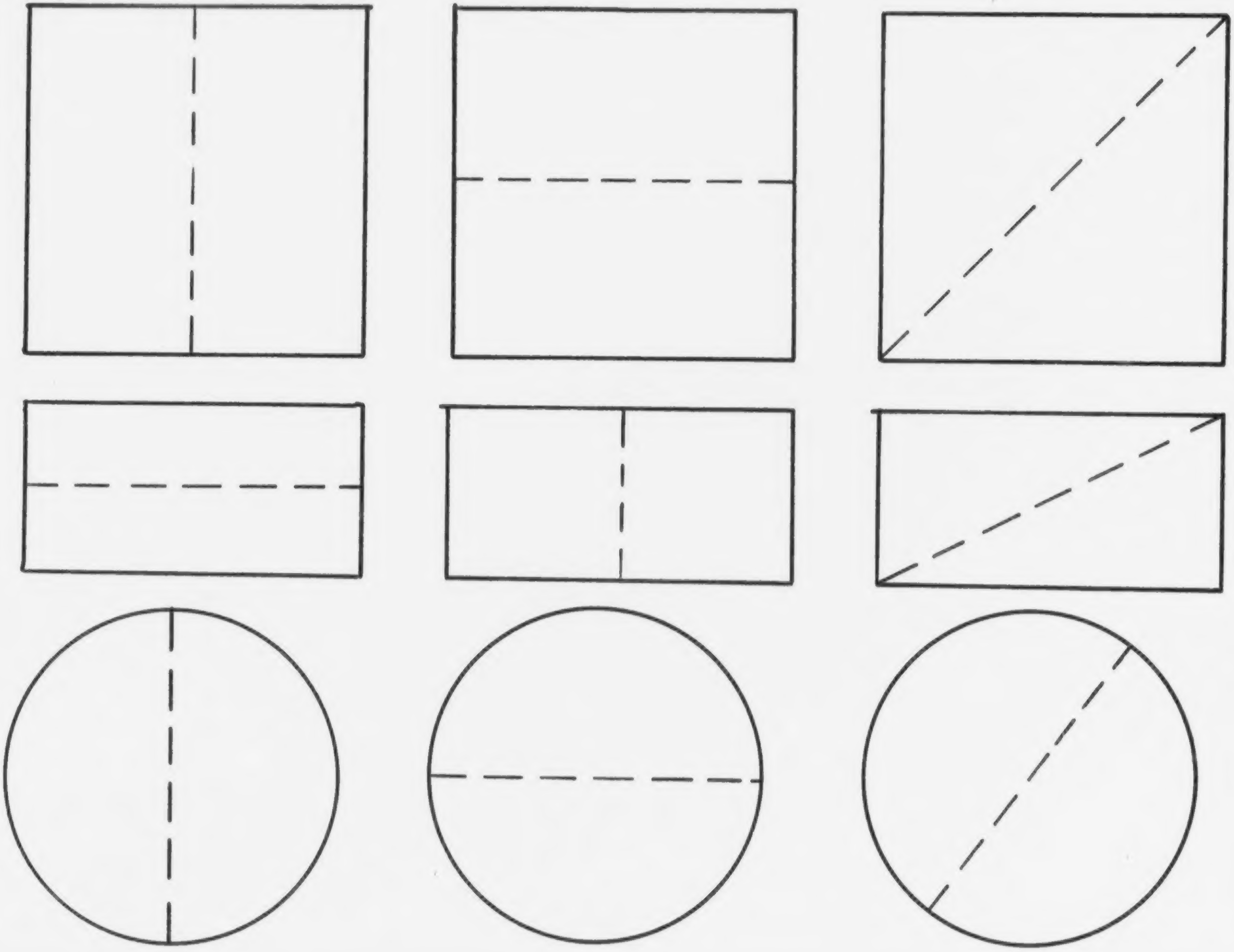
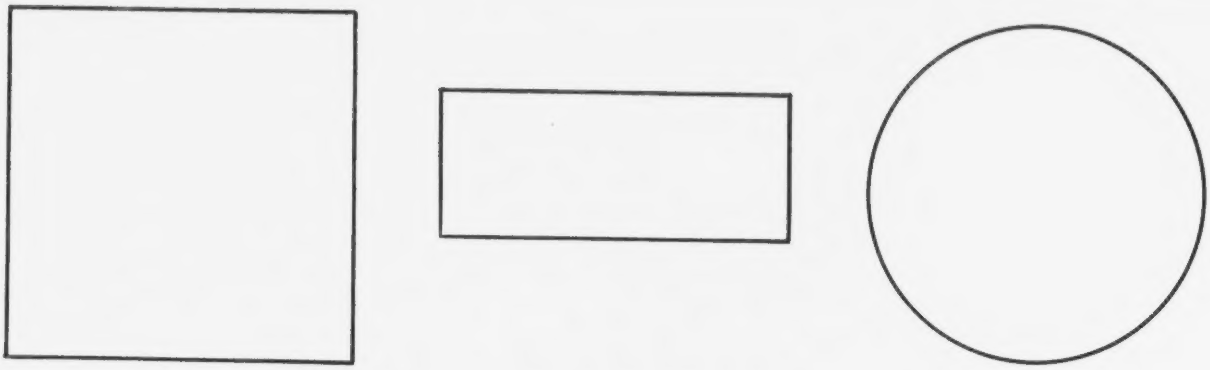
Name ______________________________





Halves Discuss different ways to divide shapes in half. Trace lines. Color one half. Children divide bottom shapes in half any way. See Unit 20 Teacher's Manual.

Name ____________________

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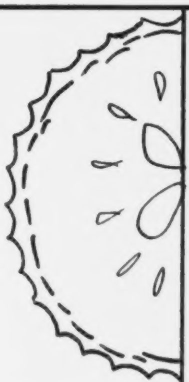

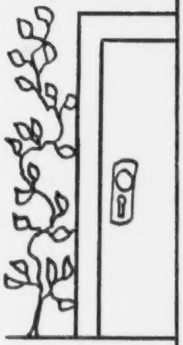

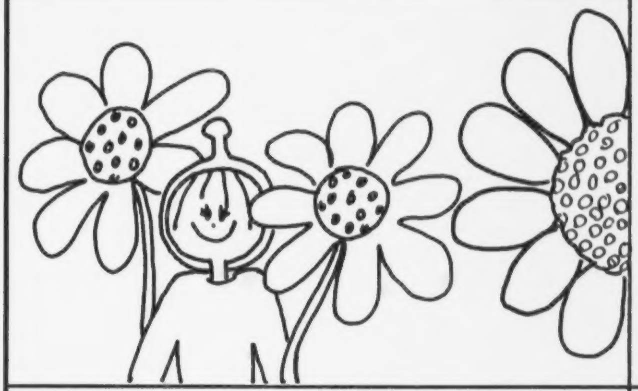

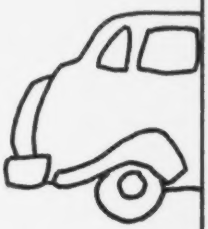

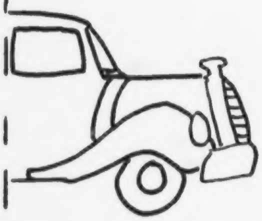

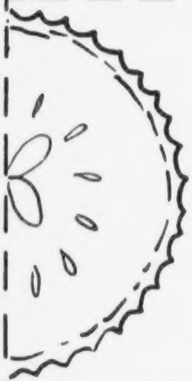

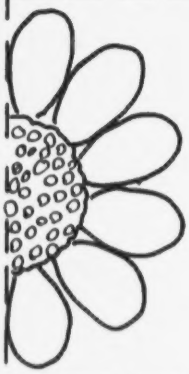

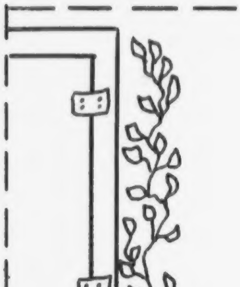

Two halves make one whole

Cut out pictures. Put halves together by pasting. See Unit 20 Teacher's Manual.

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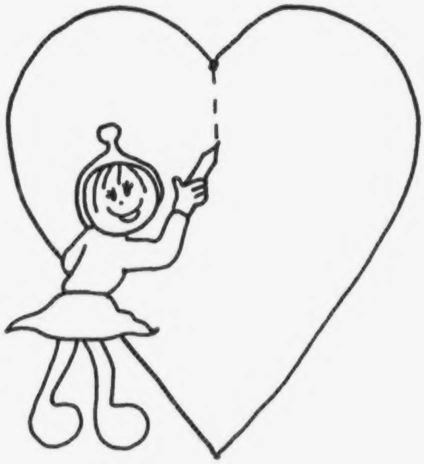
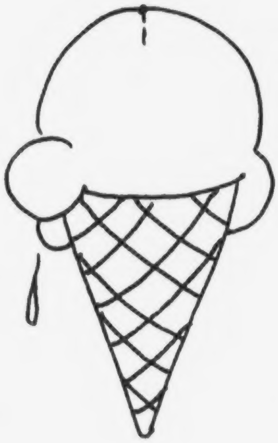
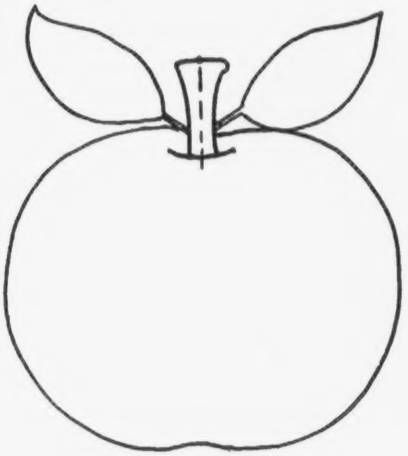
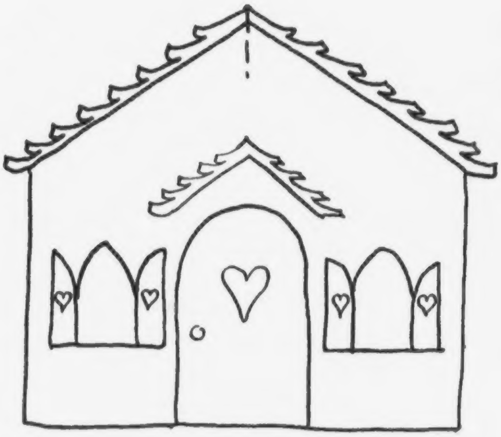
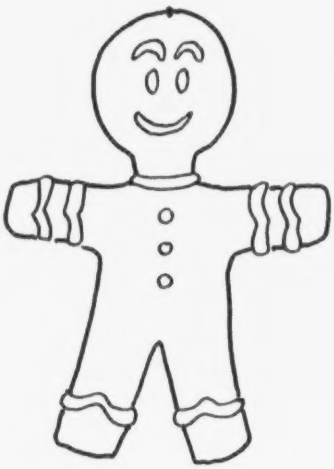
Name

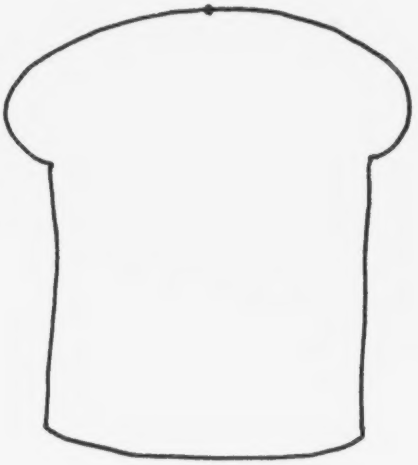








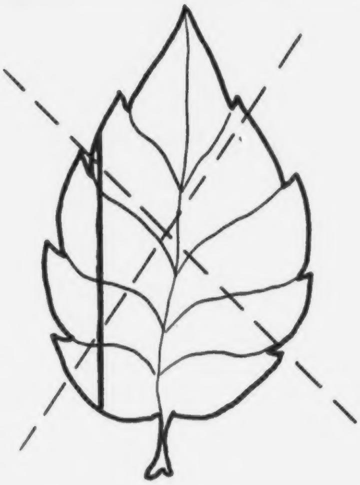


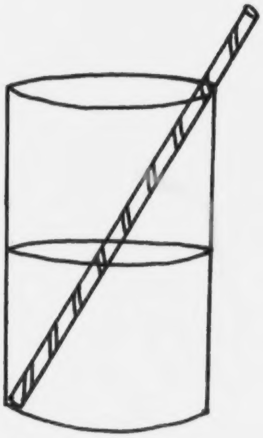


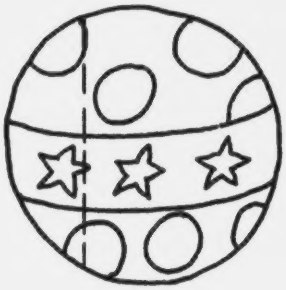
Halves

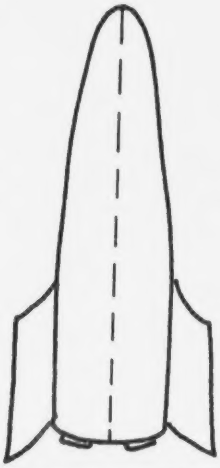
Divide each picture in half. Color one half. See Unit 20 Teacher's Manual.

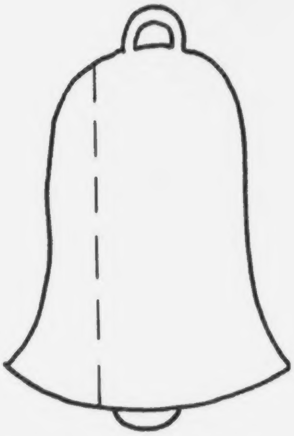
Name ______________________

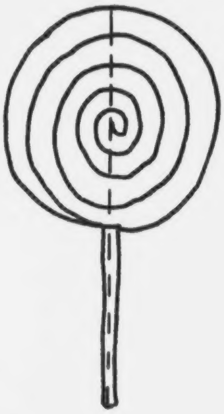


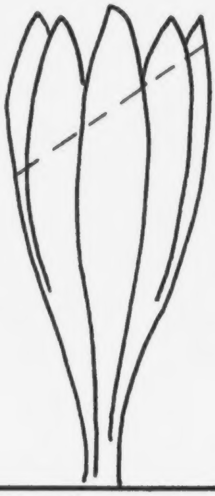


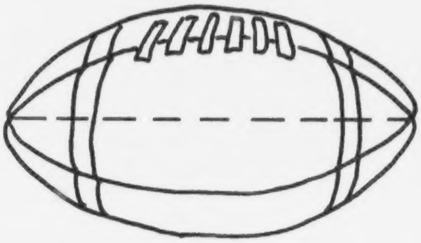


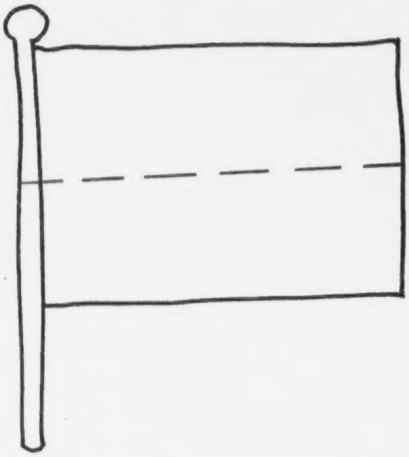












Unequal parts

Put X on pictures that are not filled or divided in half. Color pictures that are divided equally. See Unit 20 Teacher's Manual.

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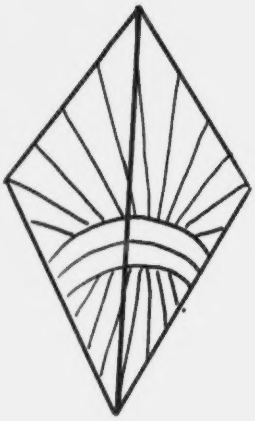
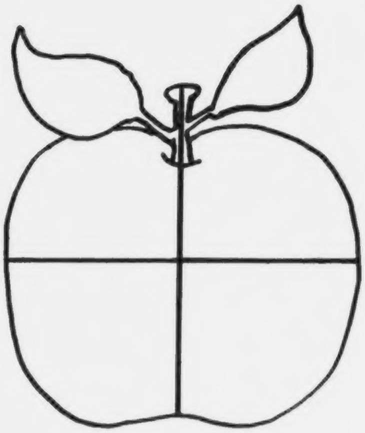
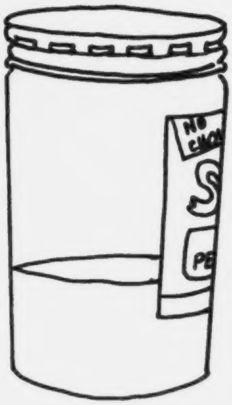
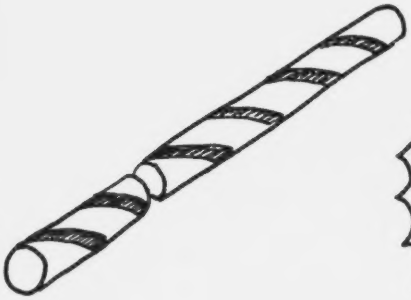
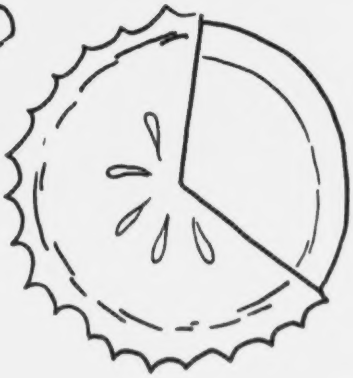
Name ______________________

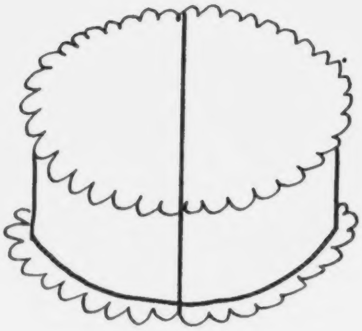


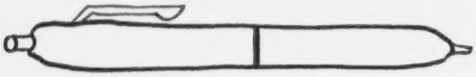


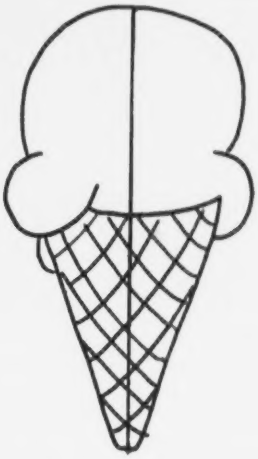


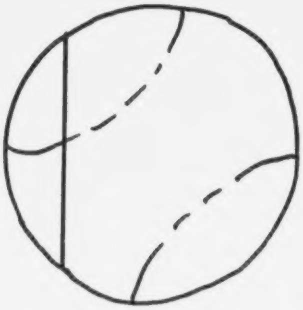












Halves

Circle and color pictures that are divided in one-half. Cross out pictures that are not one half. See Unit 20 Teacher's Manual.

Name ______________________

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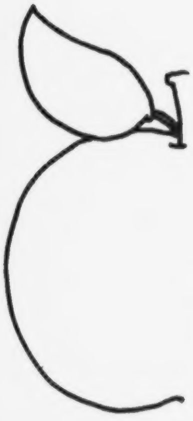

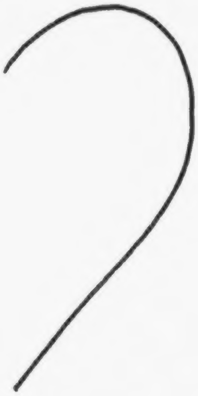

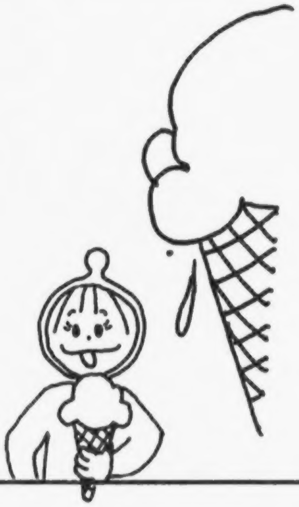

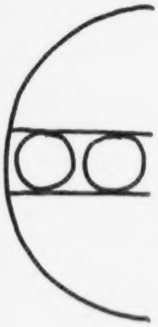

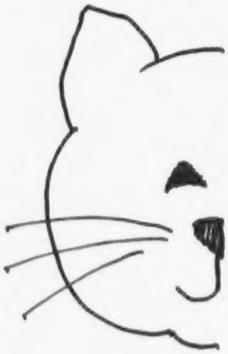

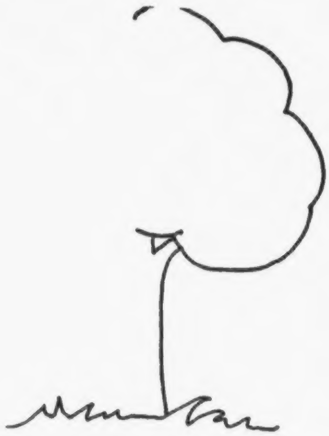

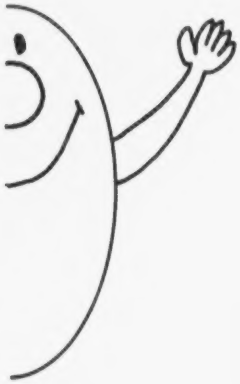

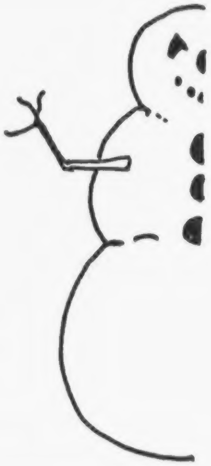

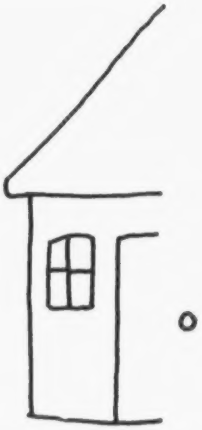

Halves to whole

Finish the halves to make a whole. See Unit 20 Teacher's Manual.

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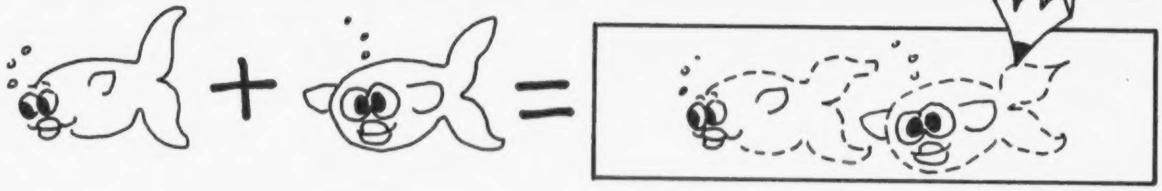
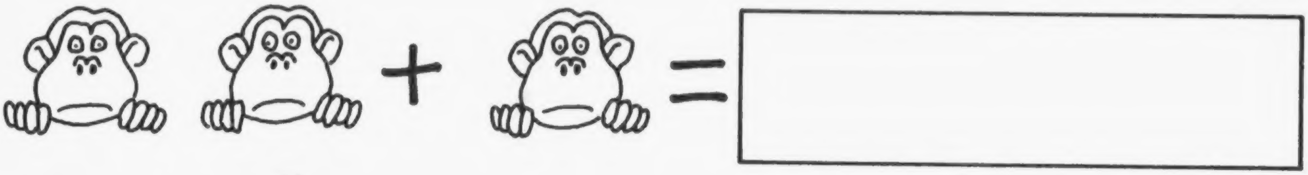
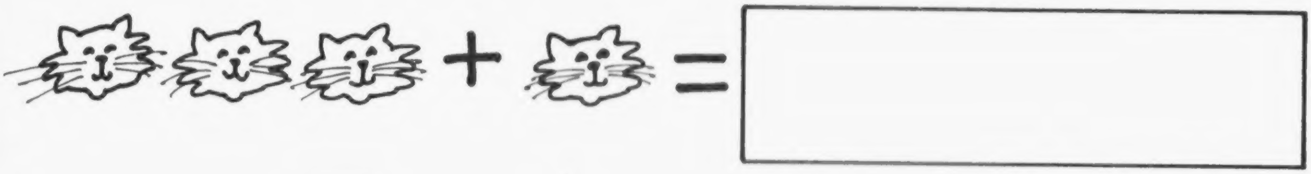
Name ______________________



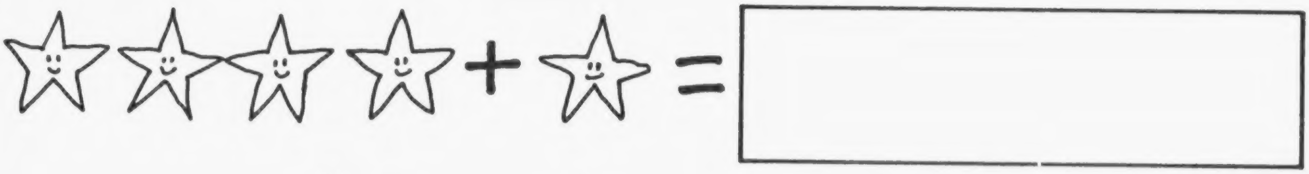
1 + 1 = ____



2 + 1 = ____



3 + 1 = ____

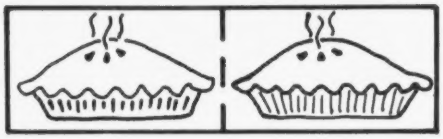


4 + 1 = ____

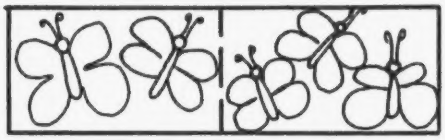
Addition - "one more"

Emphasize adding 1 more as children draw objects and write sums. Introduction of terms plus (+) and equal (=) in addition. Important - Sing Astra's Song. Discuss Astra.

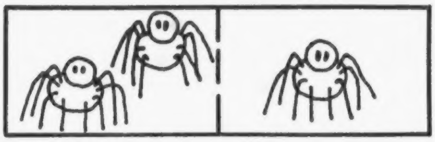
Name ______________________



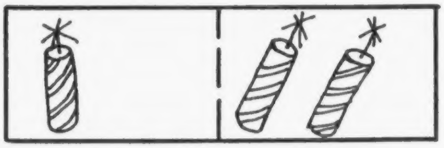
$1 + 1 = \boxed{2}$



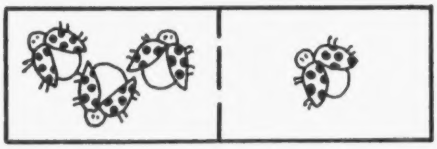
$2 + 3 = \square$



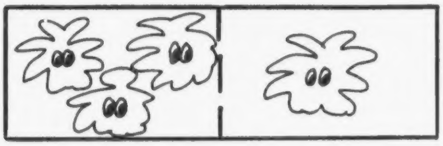
$2 + 1 = \square$



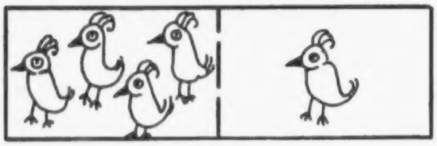
$1 + 2 = \square$



$3 + 1 = \square$



$3 + 1 = \square$



$4 + 1 = \square$

Addition to 5

Count and add pictures, read and add numbers as in sample. Reinforce concept of plus (+) and equal (=) in addition. See Unit 21 Teacher's Manual.

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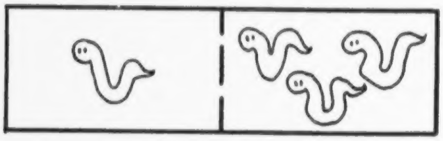
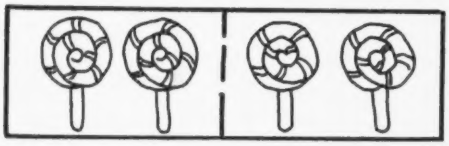
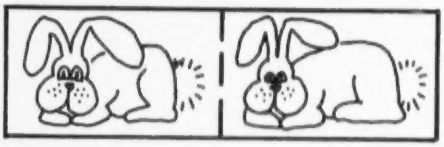


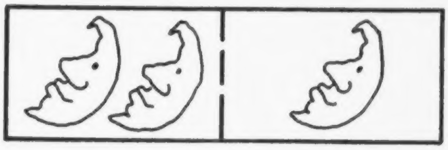
$1 + 3 = \boxed{4}$



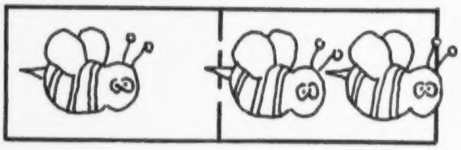
$2 + 2 = \boxed{}$



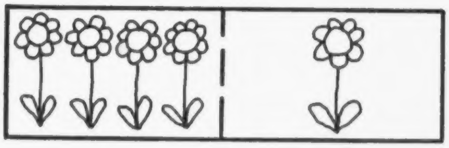
$1 + 1 = \boxed{}$



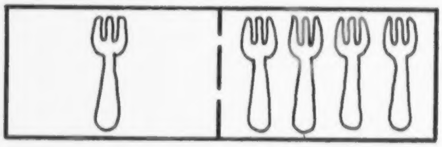
$2 + 1 = \boxed{}$



$1 + 2 = \boxed{}$



$4 + 1 = \boxed{}$

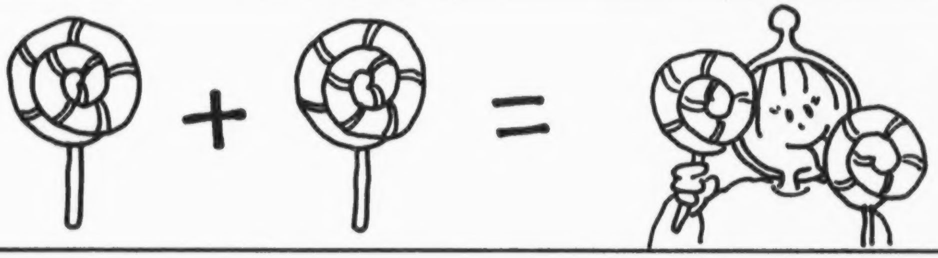


$1 + 4 = \boxed{}$

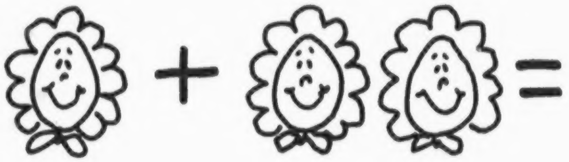
Addition to 5

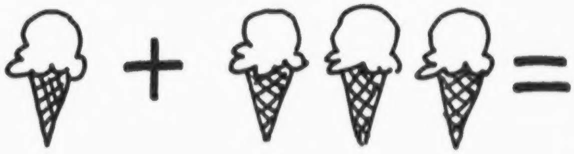
Count, read, and add numbers. Complete page.
Reinforce concept of plus and equal in addition.
See Unit 21 Teacher's Manual.

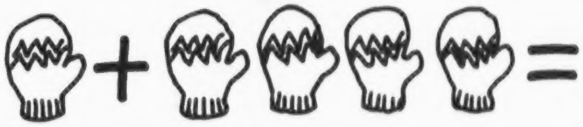
Name

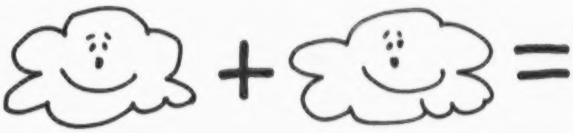


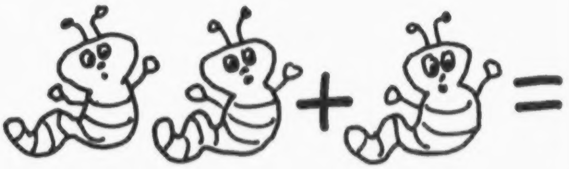
2

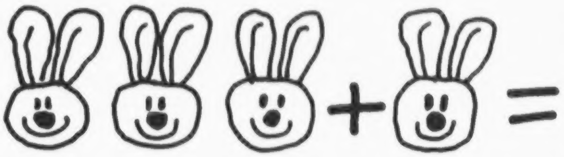








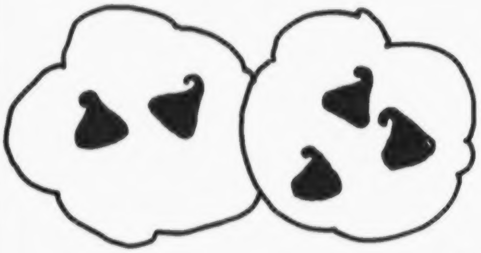




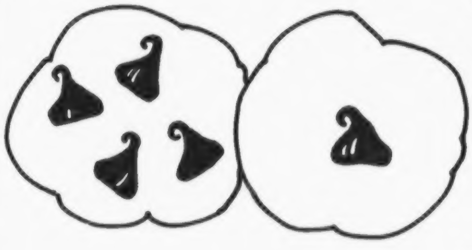
Addition 1-5

Review concepts of plus (+) and equal (=). Review adding one more. Trace sample. Complete by drawing total number of objects in box. Write numbers on lines. See Unit 21 Teacher's Manual.

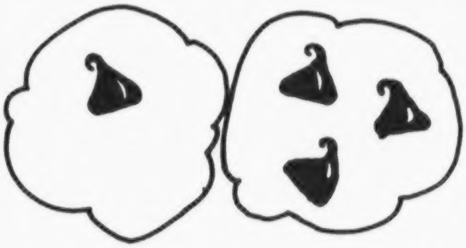
Name



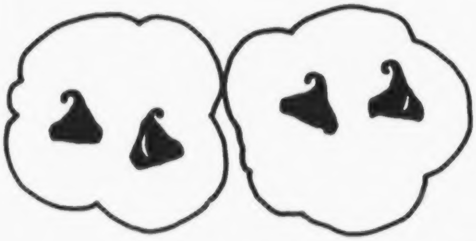
2 + 3 =



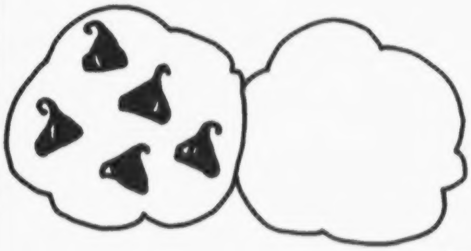
4 + 1 =



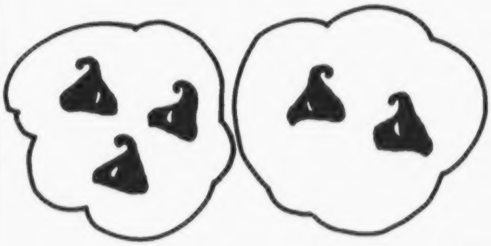
1 + 3 =



2 + 2 =



+ =

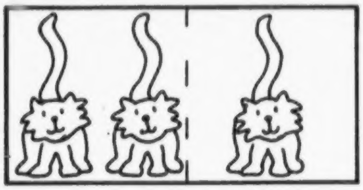


+ =

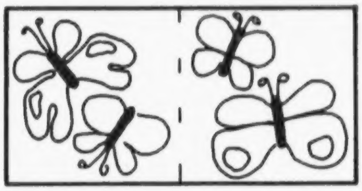
Addition to 5

Count chocolate chips. Trace/write numbers. Add to 5. Write number. See Unit 21 Teacher's Manual.

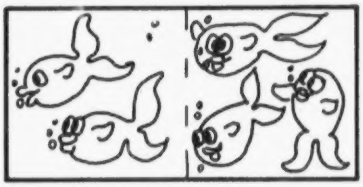
Name ______________________



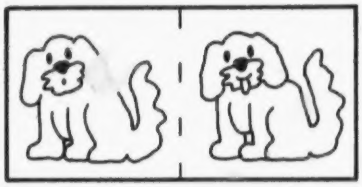
2 + 1 = 3



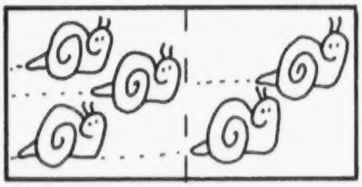
2 + 2 = ☐



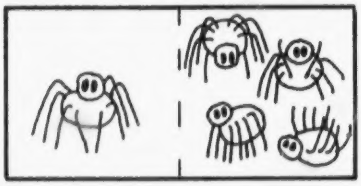
2 + 3 = ☐



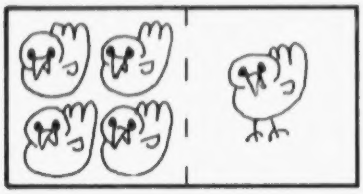
1 + 1 = ☐



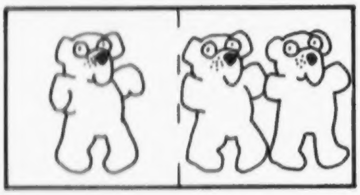
___ + ___ = ☐



___ + ___ = ☐



___ + ___ = ☐



___ + ___ = ☐

Addition to 5

Count objects. Trace sample. Continue to trace and write numbers. See Unit 21 Teacher's Manual.

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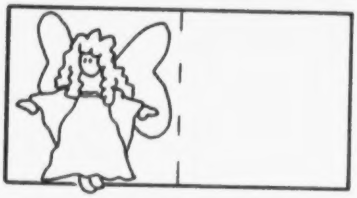
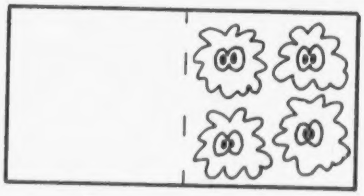
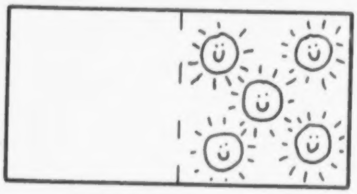


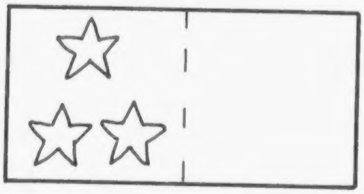
1 + 0 = ☐



0 + 4 = ☐

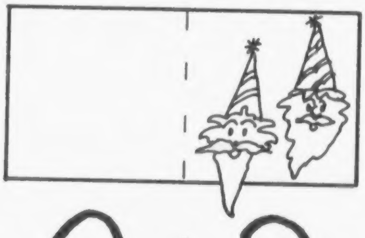


0 + 5 = ☐

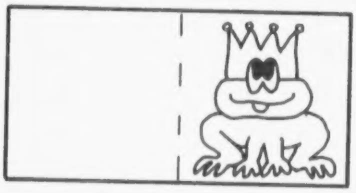


3 + 0 = ☐

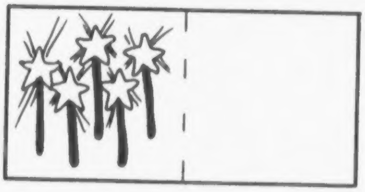
0 + 0 = ☐



0 + 2 = ☐



0 + 1 = ☐

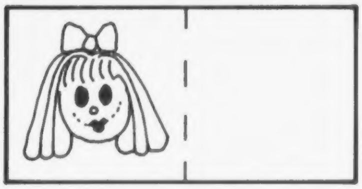


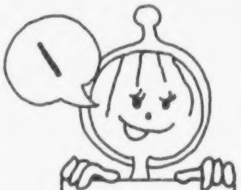
5 + 0 = ☐

Addition +0

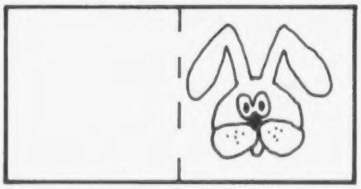
Teach concept of plus 0. Trace sample. Complete page. See Unit 21 Teacher's Manual.

Name ______________________

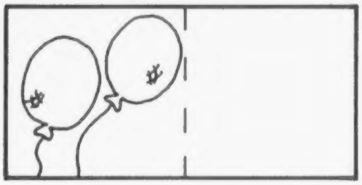




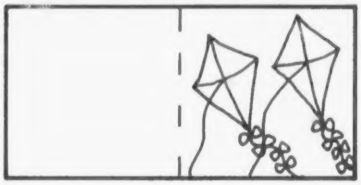
1 + 0 = 1



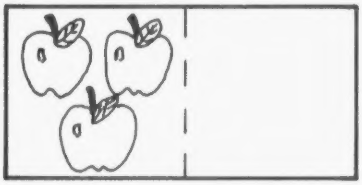
0 + 1 = 1



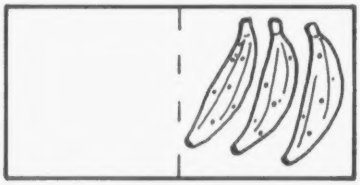
____ + ____ = ☐



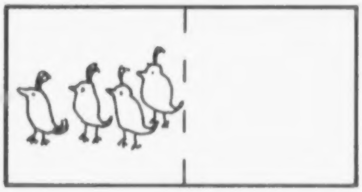
____ + ____ = ☐



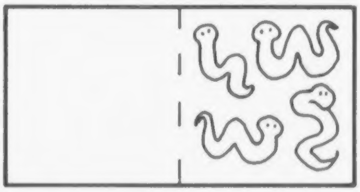
____ + ____ = ☐



____ + ____ = ☐



____ + ____ = ☐



____ + ____ = ☐

Addition + 0

Reinforce concept of +0. Stress zero as none. Complete page as per sample. Note zero plus any number equals that number. See Unit 21 Teacher's Manual.

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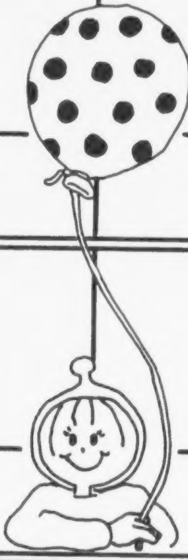
Name ______________________

1 •
+2 ••
3 •••



2 ••
+1 •

2 ••
+2 ••

1 •
+4 ⁘

1 •
+1 •

1 •
+3 •••

4 ⁘
+1 •

3 •••
+2 ••

3 •••
+1 •

2 ••
+3 •••

Addition Vertical

Read numbers, add dots. Draw and write answer.
Verbalize process. See Unit 21 Teacher's Manual.

Name _______________

1 ●
+0
1 ●

2
+0

0
+2

0
+3

4
+0

1
+0

0
+4

5
+0

0
+5

3
+0

Addition Vertical

Read number. Draw and add dots. Write answer.
Verbalize process. See Unit 21 Teacher's Manual.

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Name ____________________

3 + 1 = 4

4 + 1 = ___

2 + 3 = ___

1 + 2 = ___

0 + 2 = ___

1 + 1 = ___

1 + 0 = ___

2 + 2 = ___

2 + 1 = ___

1 + 4 = ___

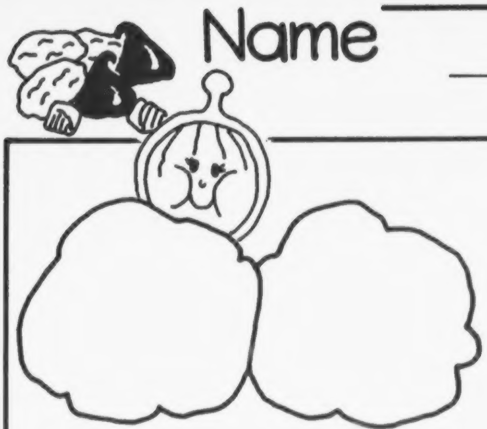
4 + 0 = ___

1 + 3 = ___

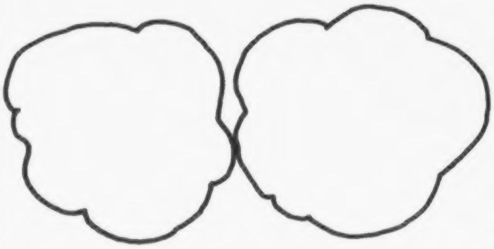
Addition 0-5

Trace sample. Complete page. Repeat combinations to 5. See Unit 21 Teacher's Manual.

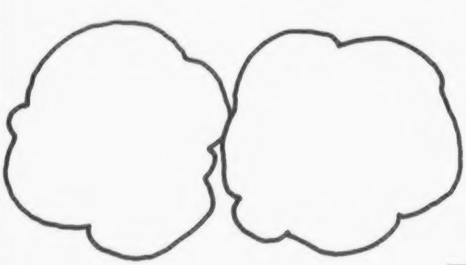
Name ______________________ **175**



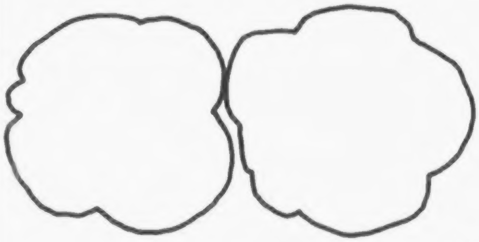
____ + ____ = ☐



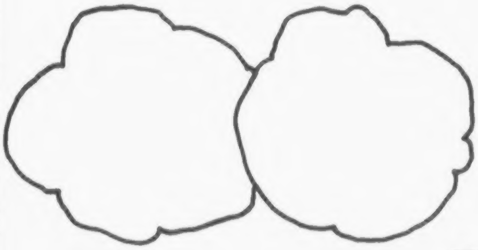
____ + ____ = ☐



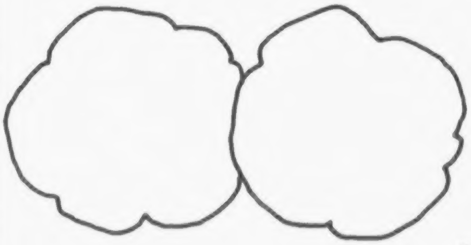
____ + ____ = ☐



____ + ____ = ☐



____ + ____ = ☐



____ + ____ = ☐

Addition to 5

Draw chocolate chips, raisins, or nuts, as directed by teacher. (Note to teacher - duplicate for additional practice with creative cookies!) See Unit 21 Teacher's Manual.

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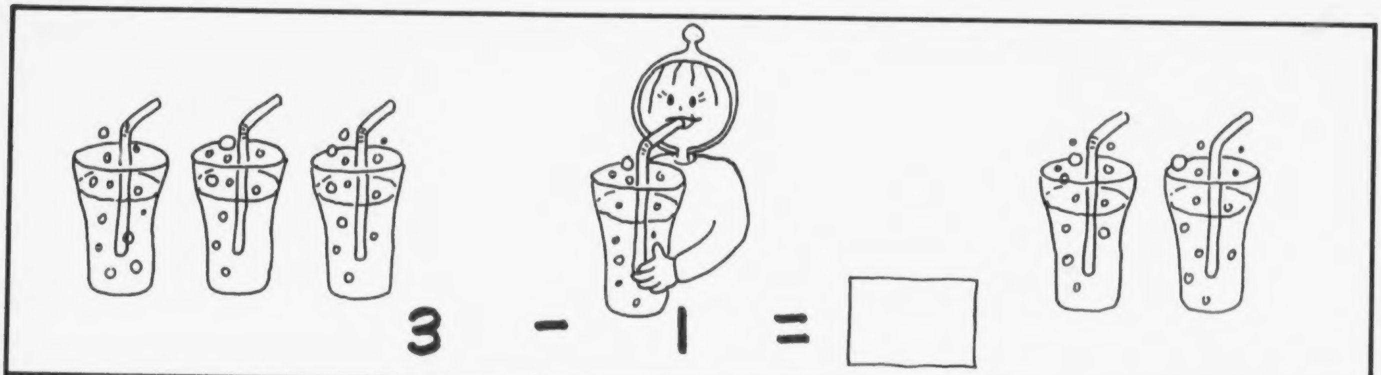
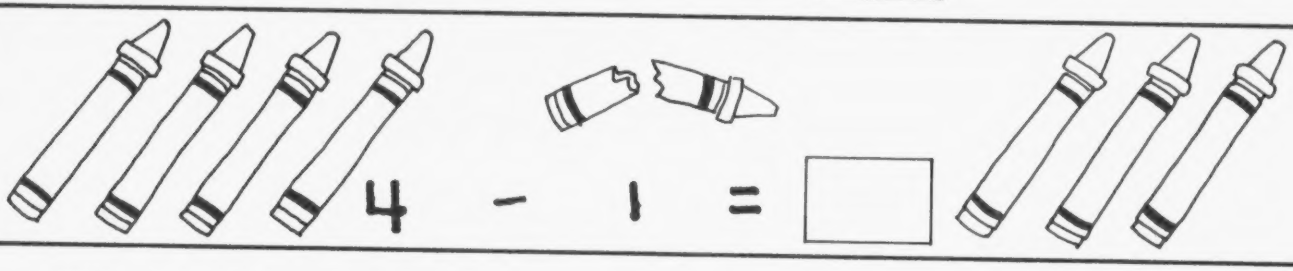
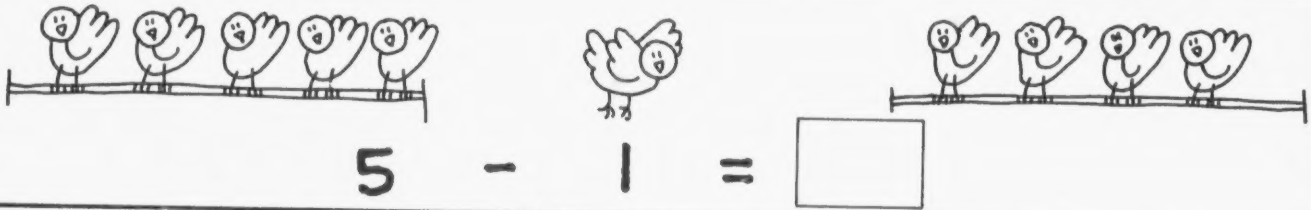
Name ____________________



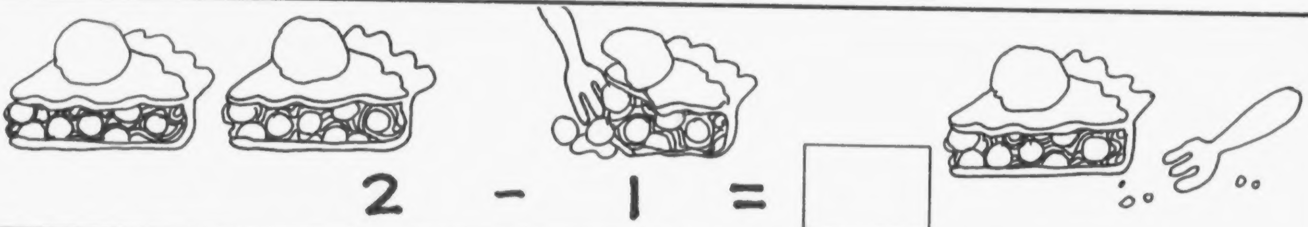
3 - 1 = ☐



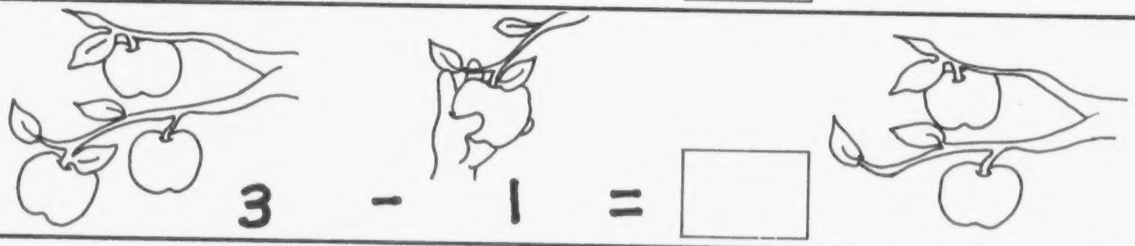
4 - 1 = ☐



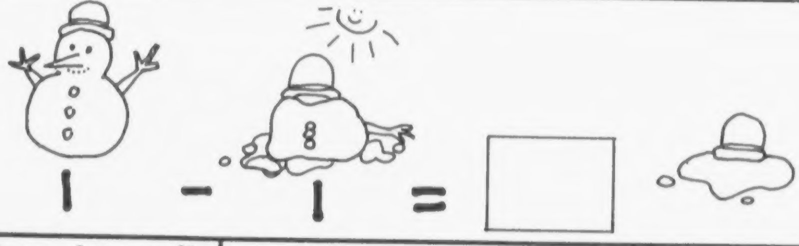
5 - 1 = ☐



2 - 1 = ☐



3 - 1 = ☐

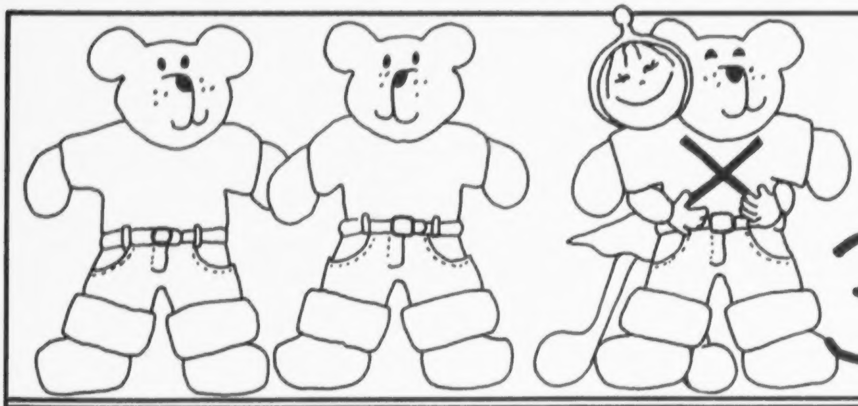


1 - 1 = ☐

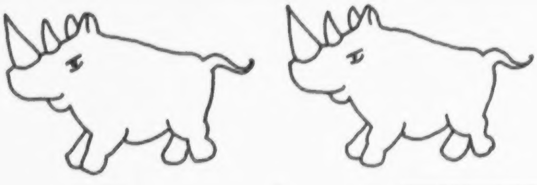
Subtraction "One less"

Discuss pictures. Emphasize 1 in each row. Introduce terms minus (-), one less, and take away in subtraction. See Unit 22 Teacher's Manual.

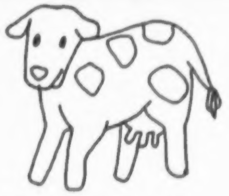
Name ______________________



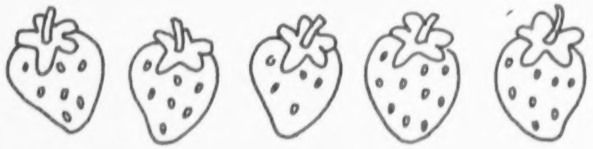
3 − 1 = $\boxed{2}$



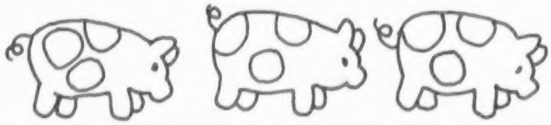
2 − 1 = ☐



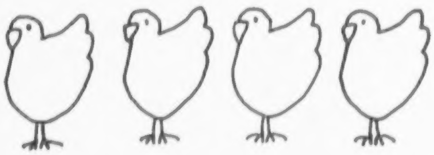
1 − 1 = ☐



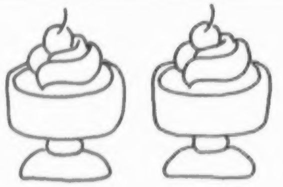
5 − 1 = ☐



3 − 1 = ☐



4 − 1 = ☐

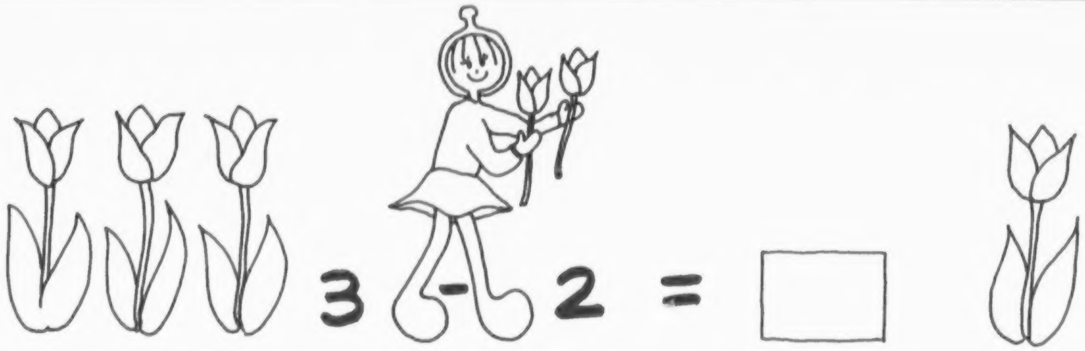


2 − 1 = ☐

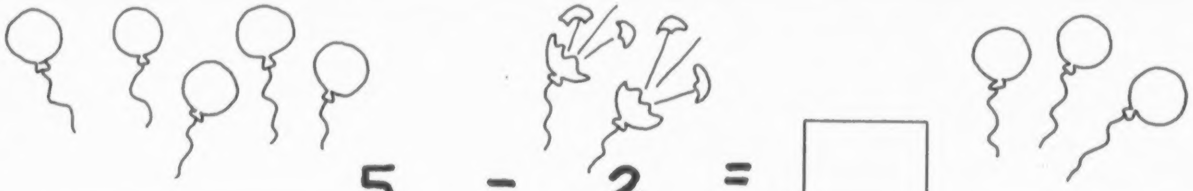
Subtraction "One Less"

Review subtracting 1 as you cross out 1 in each box and write correct answer. Review terms minus (-), one less, and take away in subtraction. See Unit 22 Teacher's Manual.

178 Name ______________________________

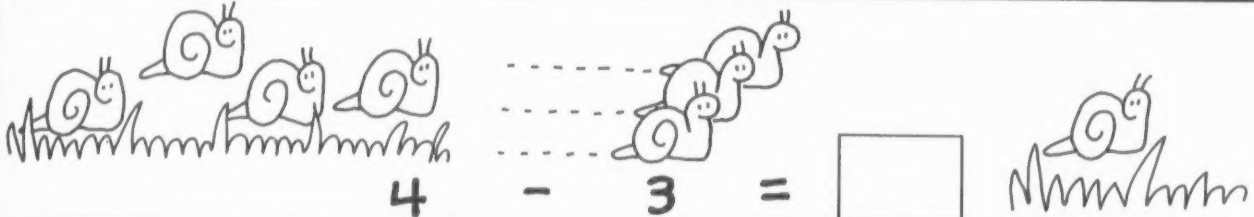


3 - 2 = ☐

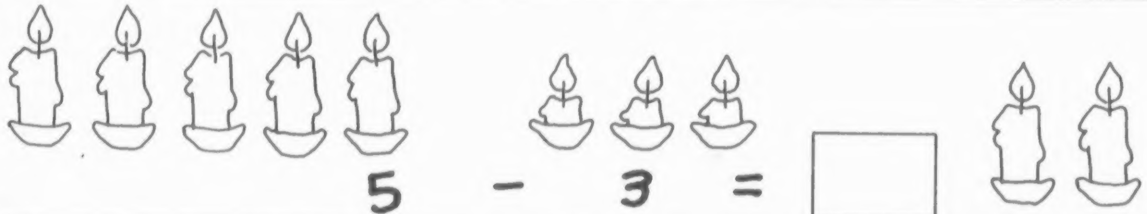


5 - 2 = ☐

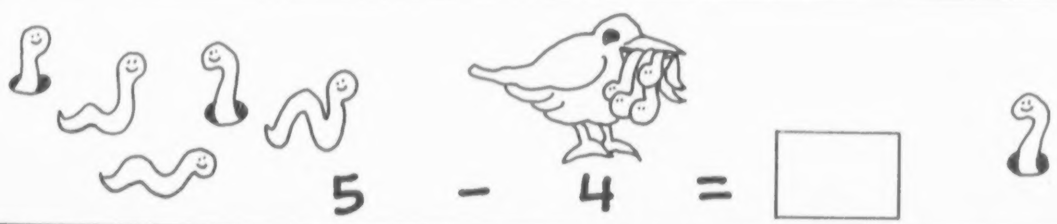
2 - 2 = ☐



4 - 3 = ☐



5 - 3 = ☐

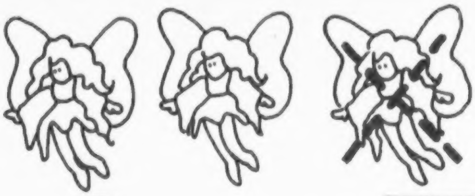


5 - 4 = ☐

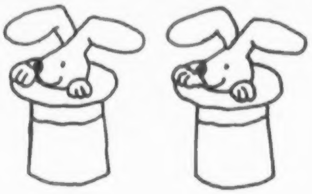
Subraction 1-5

Discuss pictures. Read number sentences. Review terms. Write answers. See Unit 22, Teacher's Manual.

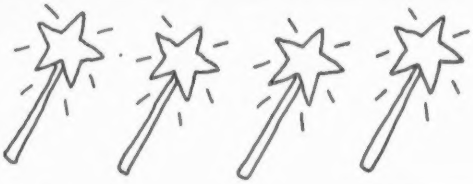
Name ________________



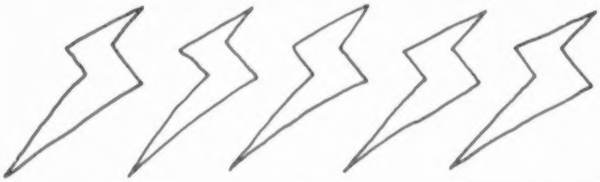
3 − 1 = 2



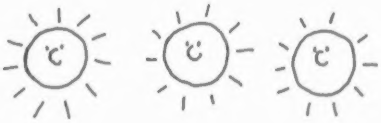
2 − 1 = ☐



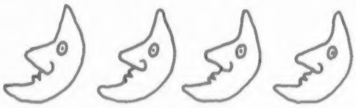
4 − 1 = ☐



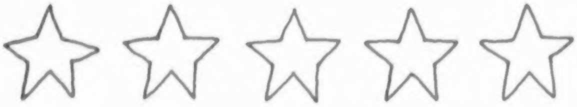
5 − 1 = ☐



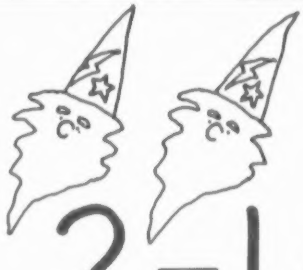
3 − 2 = ☐



4 − 3 = ☐



5 − 4 = ☐

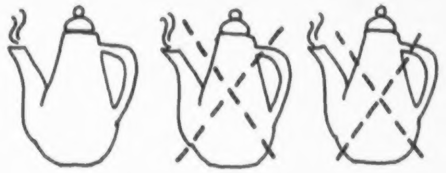


2 − 1 = ☐

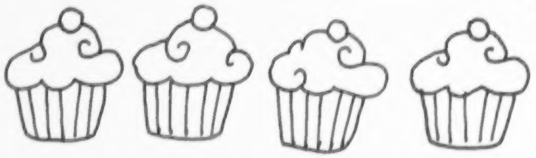
Subtraction 1-5

Reinforce concept of minus. Use - sign. Review subtraction by taking away 1. Trace sample. Write answer. Complete page. See Unit 22 Teacher's Manual.

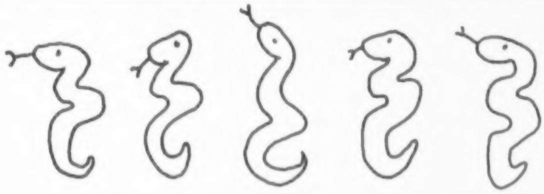
180 Name



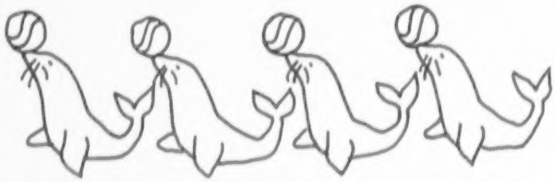
$3-2=\boxed{1}$



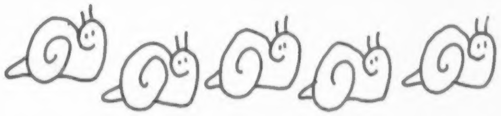
$4-2=\boxed{}$



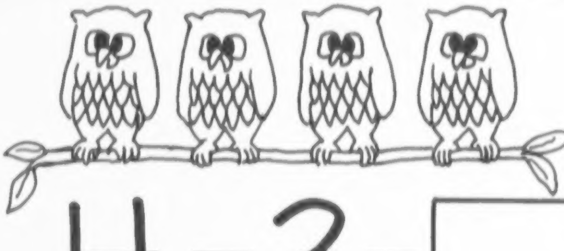
$5-3=\boxed{}$



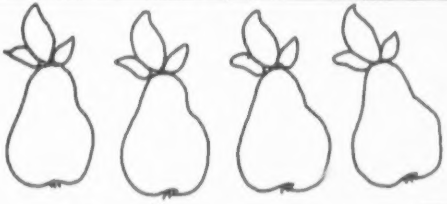
$4-1=\boxed{}$



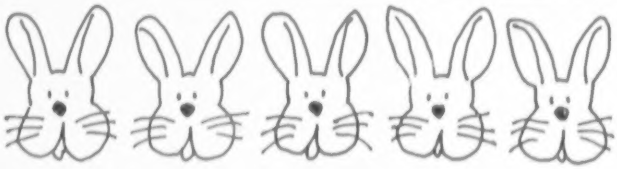
$5-1=\boxed{}$



$4-3=\boxed{}$



$4-1=\boxed{}$

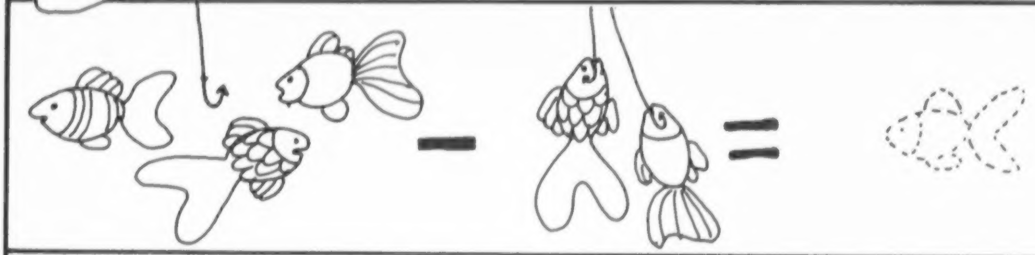


$5-4=\boxed{}$

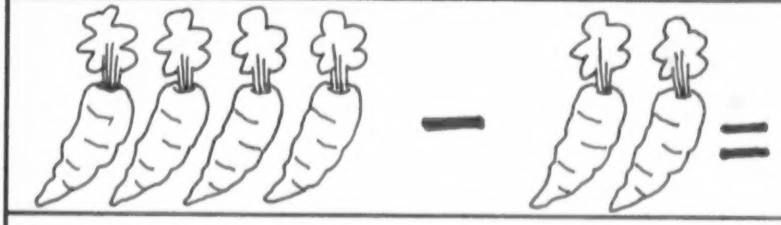
Subtraction 1-5

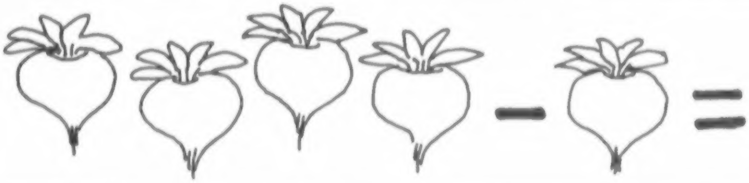
Review terms minus, take away, and equal. Trace sample. Cross out, count, and write answer. Verbalize terms and number sentences. Complete page. See Unit 22 Teacher's Manual.

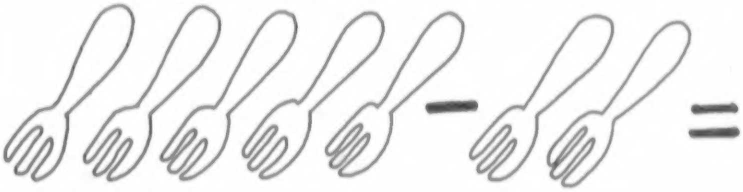
Name

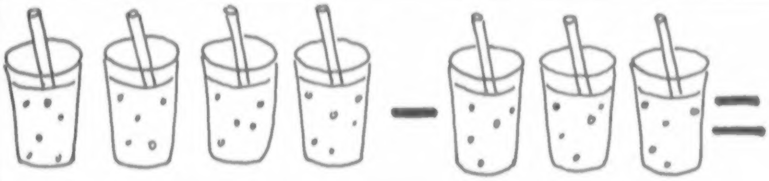


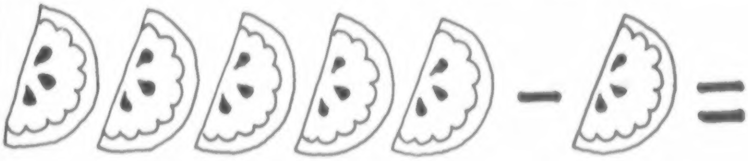
1

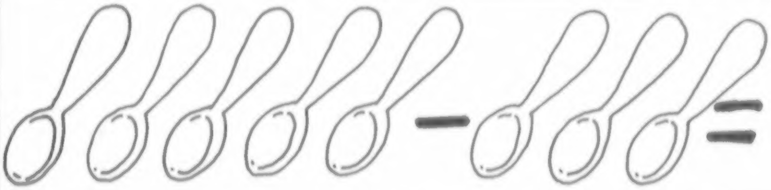








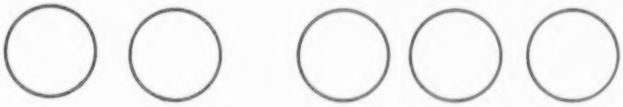




Subraction 1-5

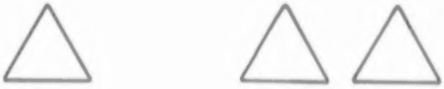
Read pictures. Draw answer. Write number.
See Unit 22 Teacher's Manual.

182 Name

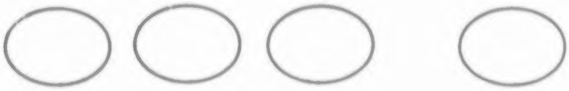


5 - 3 = 2

3 - 1 =

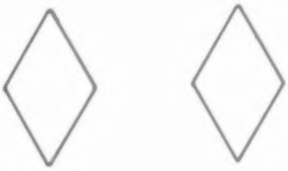


3 - 2 =



4 - 1 =

4 - 3 =

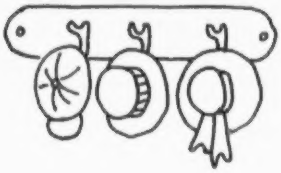


2 - 1 =

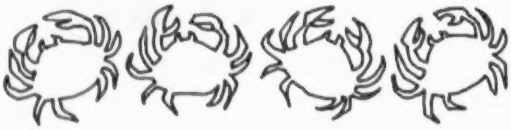
Subtraction 1-5

Complete sample. Finish page. See Unit 22 Teacher's Manual.

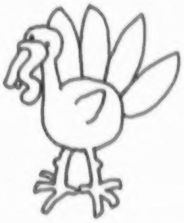
Name ____________________



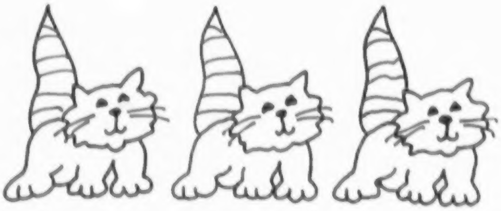
3 - 0 = ____



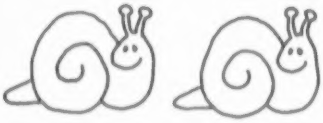
4 - 0 = ____



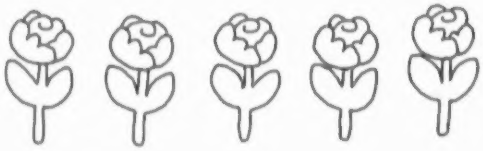
1 - 0 = ____



3 - 0 = ____



2 - 0 = ____

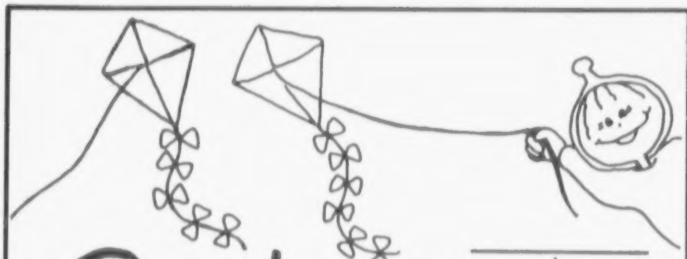


5 - 0 = ____

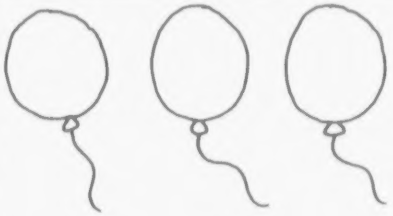
Subtraction - Minus 0

Introduce concept of number minus 0 = same number. Trace sample. Complete page. See Unit 22 Teacher's Manual.

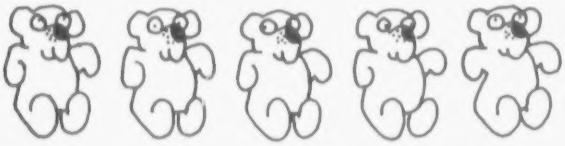
Name ____________________



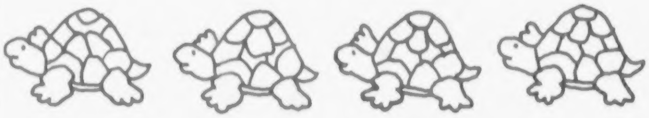
2 - 1 = 1



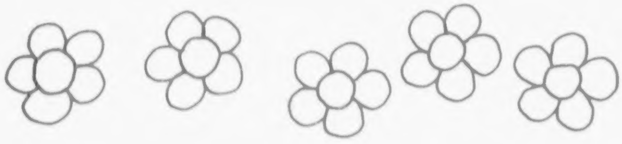
3 - 2 = ____



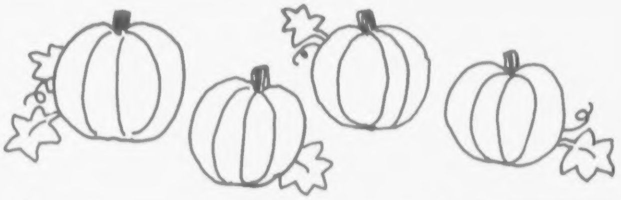
5 - 2 = ____



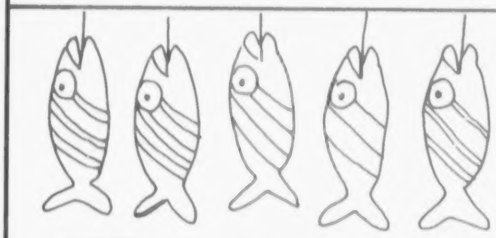
4 - 3 = ____



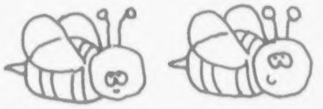
5 - 1 = ____



4 - 2 = ____



5 - 3 = ____

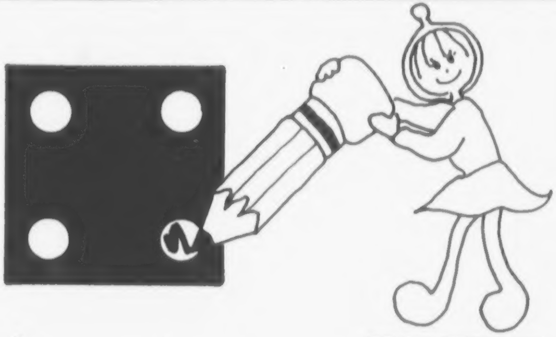


2 - 1 = ____

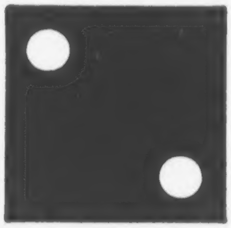
Subtraction 1-5

Trace sample. Complete page. See Unit 22 Teacher's Manual.

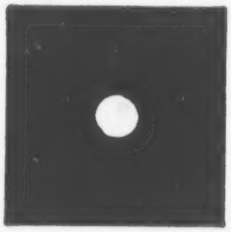
Name ______________________



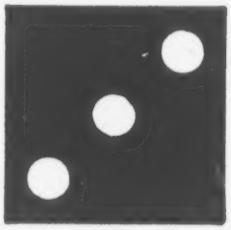
4-1 = ____



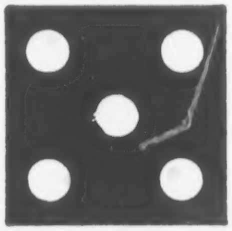
2-2 = ____



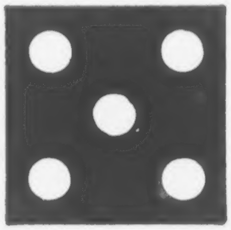
1-0 = ____



3-1 = ____



5-2 = ____

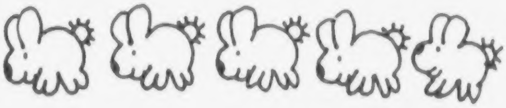


5-5 = ____

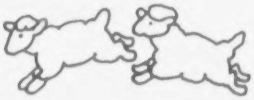
Subtraction 1-5

Complete sample. Count dots. Cross out correct number. Complete page. See Unit 22 Teacher's Manual.

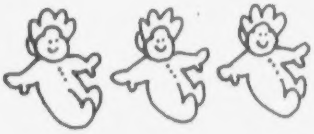
186 Name ____________________



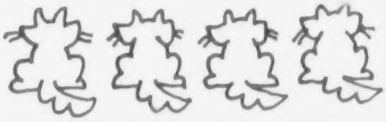
5 - 2 = ☐



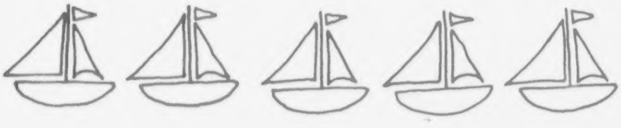
2 - 2 = ☐



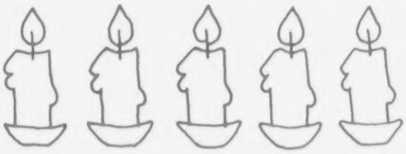
3 - 1 = ☐



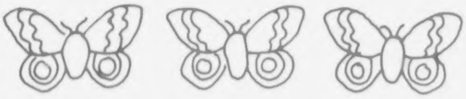
4 - 1 = ☐



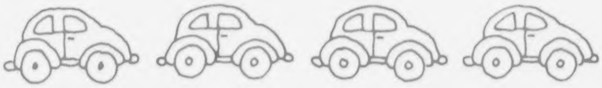
5 - 0 = ☐



5 - 3 = ☐



3 - 2 = ☐



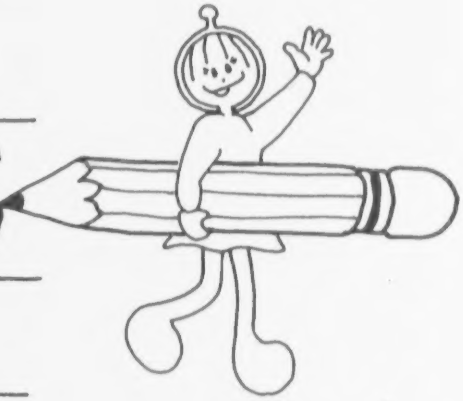
4 - 3 = ☐

Subtraction 0-5

Read subtraction problems. Write answers.
See Unit 22 Teacher's Manual.

Name ______________________

1-1 = 0



1-0 = ____

2-0 = ____

5-2 = ____

3-1 = ____

5-5 = ____

2-1 = ____

4-3 = ____

5-1 = ____

3-2 = ____

4-4 = ____

Subtraction 0-5

Read subtraction problems. Write answers.
See Unit 22 Teacher's Manual.

Dear Parents:

This is to inform you about Astra's Magic Math, a fun learning process of total math experiences for young children that I will be using in class.

The lessons are geared to build a child's self-image and confidence. Teacher and parent expectation play a very important part in a child's success, and Astra's Magic Math is planned to guarantee this success.

Astra's Magic Math is an exciting, motivational multi-sensory program that teaches basic math skills through sequentially developed self-contained units designed to combine manipulation, writing, and language activities. The units are first introduced to the large group to stimulate interest and develop concepts through oral language. Children then work independently as they experiment with the concepts through manipulation of objects and completion of worksheets.

Motivation is stimulated through the use of "ASTRA," a friendly character from outer space, who will visit our classroom daily to bring surprises about learning shapes and numbers. She will usually carry a flag with cues and motivations for the children and a box full of surprises which she leaves in the classroom.

Sincerely,

Dear Parents,

By now you may have heard about our exciting friend, Astra, our invisible friend from outer space, who brings us shape and number activities to do each day. Her motto is "I like you" and one of her main roles is to help children establish positive academic self-images as they begin to learn basic skills in math.

In our class there are "4 R's." The traditional skills of reading, writing and arithmetic and the fourth of responsibility. Responsibility is an increasingly important skill in our complicated society and one with a high priority in our classroom.

For each unit, your child will bring home an "Astra" homework paper on which to paste or draw a picture of something. We will emphasize skills such as identifying and writing shapes and numbers. Ask your child, each week, about Astra. Please encourage this blending of imagination and skills which we find so effective.

We are looking forward to your support and participation in preparing your child to learn basic math skills. Thank you for your help and cooperation in welcoming Astra into your home.

Sincerely,

P.S. If you have any questions or suggestions, please call us.

Astra's Magic Math **Unit 1 Homework**

I need to cut and paste or draw a picture that contains the shape in each box.

○

□

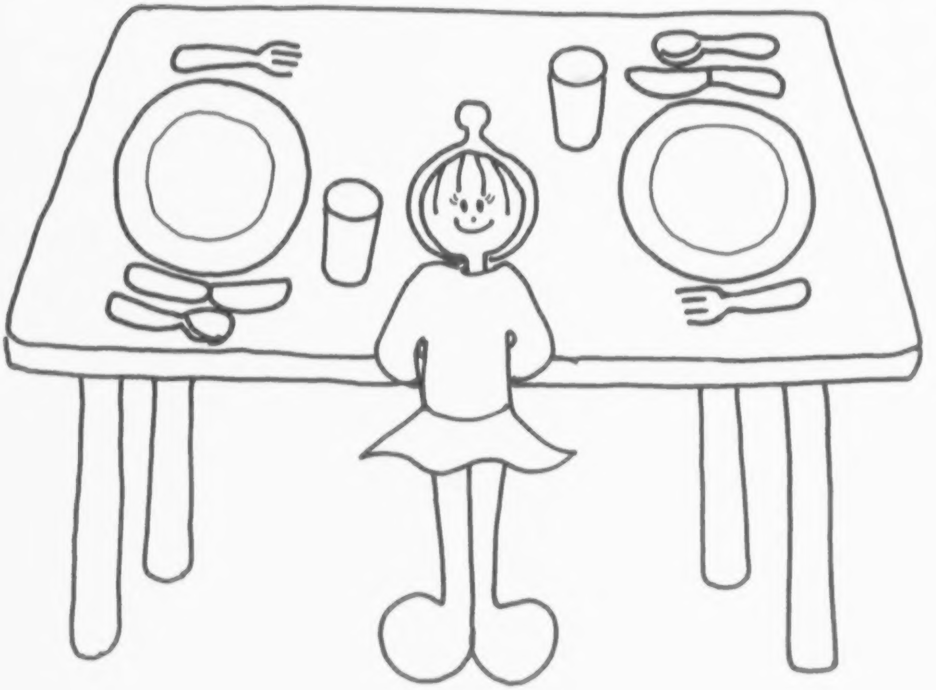
△

▭

Name

Astra's Magic Math Unit 2 Homework

Please let me set the table for dinner. I am learning to match one-to-one. I need to give each person the same things.



Name ______________________

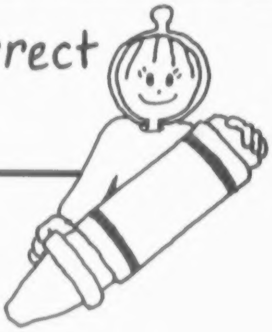
Keep the top. Please sign the bottom and send to school.

______________ set the table for dinner.
Child's name

____
Parent

Astra's Magic Math **Unit 3 Homework**

Please help me to find or draw the correct pictures for the words on this sheet.



Big

Small

Bigger

Smaller

Biggest

Smallest

Name____

Astra's Magic Math **Unit 4 Homework**

I need to cut and paste or draw objects for the numbers in each box.

1

4

2

0

3

5

Name

Astra's Magic Math **Unit 5 Homework**

I need to practice writing my numbers.

0 0

1 1

2 2

3 3

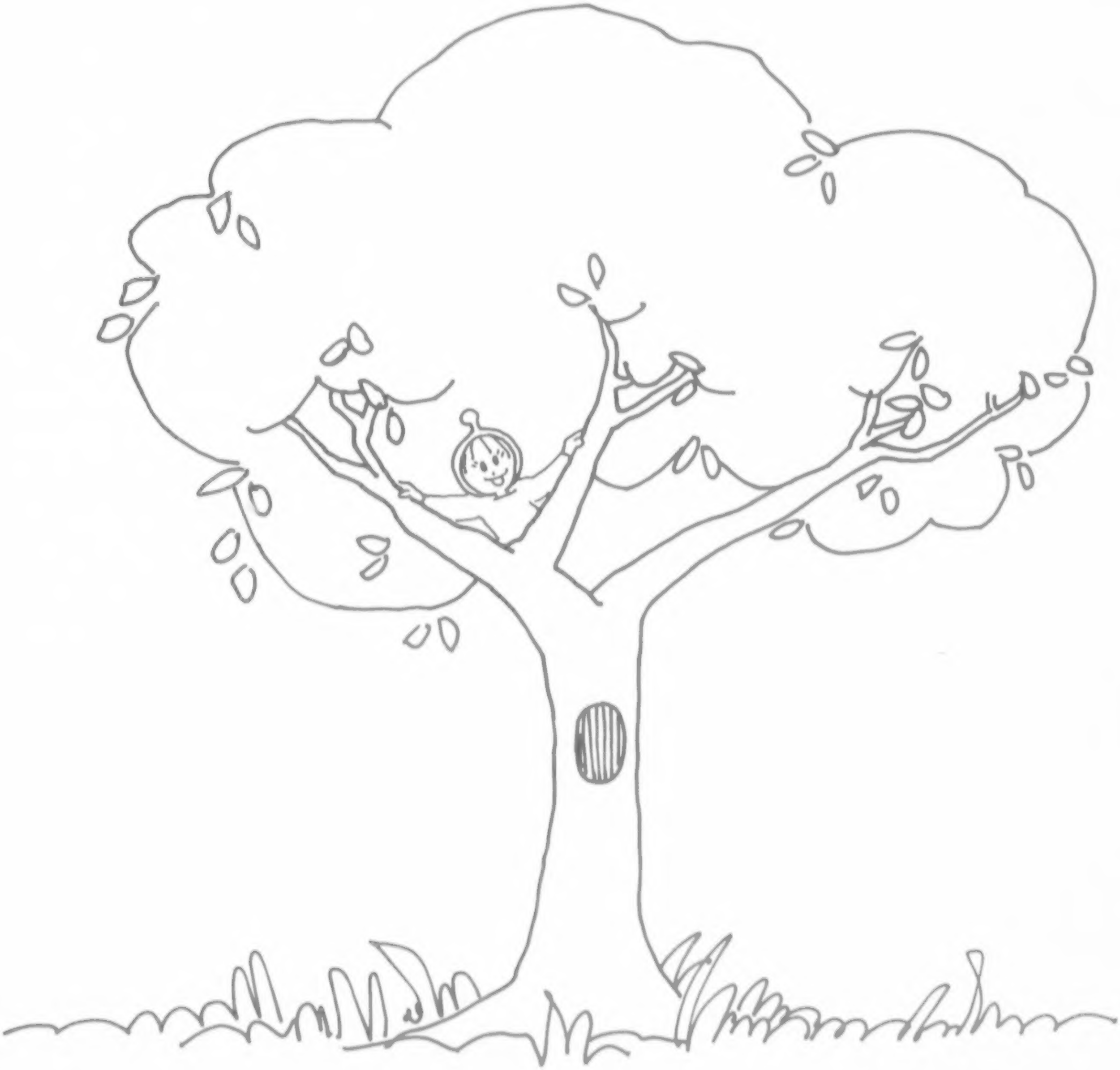
4 4

5 5

Name

Astra's Magic Math Unit 6 Homework

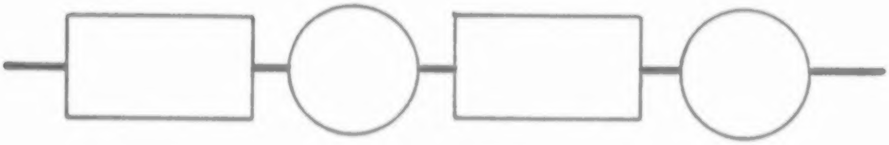
I need to put a bird above the tree, an apple below the tree, a cat next to the tree, a ball on the left and myself on the right of the tree.

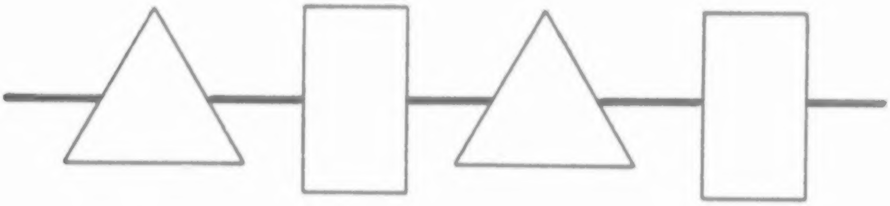


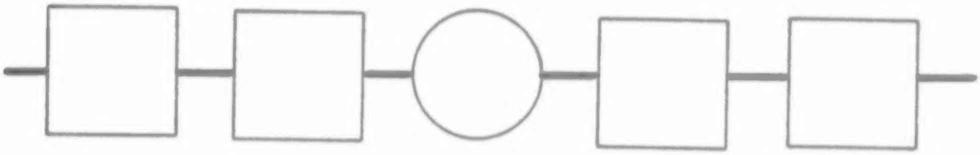
Name ____________________

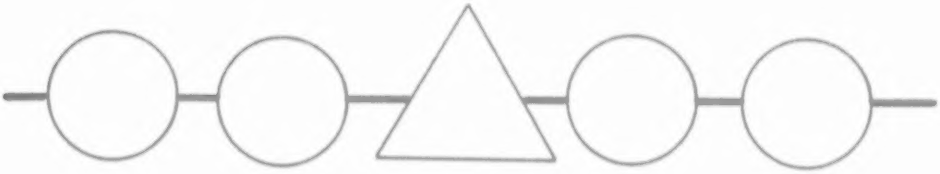
Astra's Magic Math　　Unit 7 Homework

I need to finish Astra's patterned chains.









Name

I need to cut and paste or draw things for each number.

8

6

10

7

9

Name ______________________________

Astra's Magic Math
Unit 9 Homework

I need to practice writing my numbers.

6 6

7 7

8 8

9 9

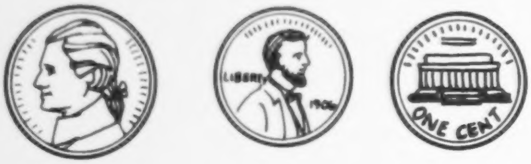
10 10

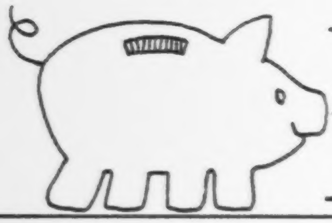
1 2 3

Name

Astra's Magic Math **Unit 10 Homework**

I need to count the coins and write the correct amount.





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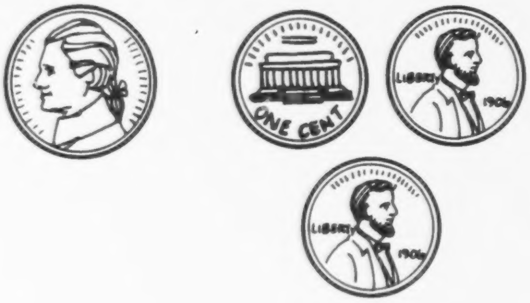

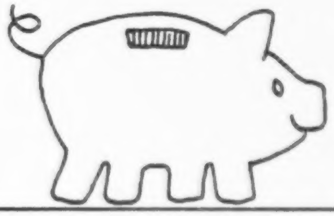

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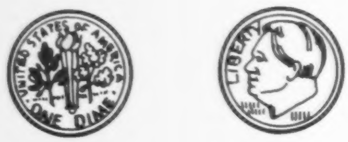
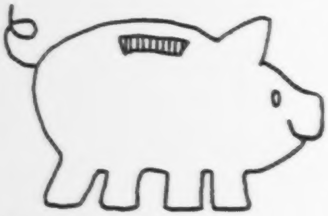
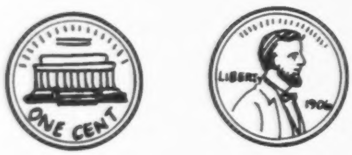
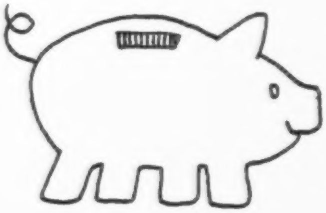




¢





¢

Name

Astra's Magic Math **Unit 11 Homework**

I need to practice writing my numbers from 1 to 20.

1 11

2 12

3 13

4 14

5 15

6 16

7 17

8 18

9 19

20 20

12

Name ______________________

Astra's Magic Math **Unit 12 Homework**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

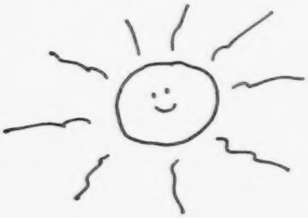
I need to write my numbers from 1 to 30

Name

Astra's Magic Math Unit 13 Homework

I need to make this calendar the same as the "real" one for this month.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday



Name ______________________________

Astra's Magic Math   Unit 14 Homework

I need to count by two's to thirty.

2 ______ ______ ______ ______

______ ______ ______ ______ ______

______ ______ ______ ______ ______

I need to count by fives to thirty.

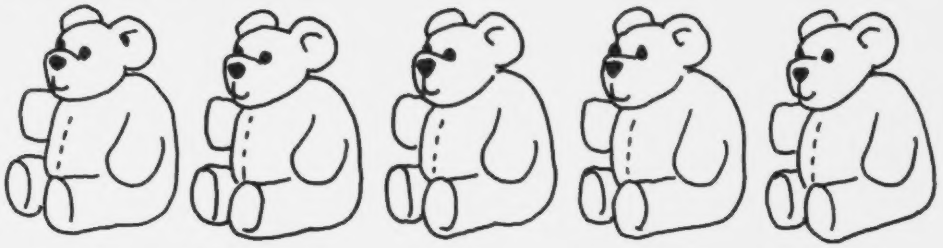
5 ______ ______ ______ ______ ______

Name ____________________________________

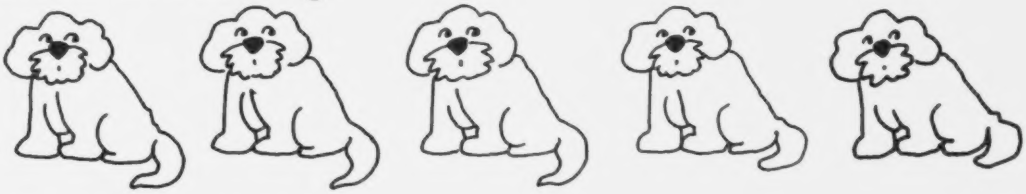
Astra's Magic Math Unit 15 Homework

I need to know 1st, 2nd, 3rd, 4th, and 5th.

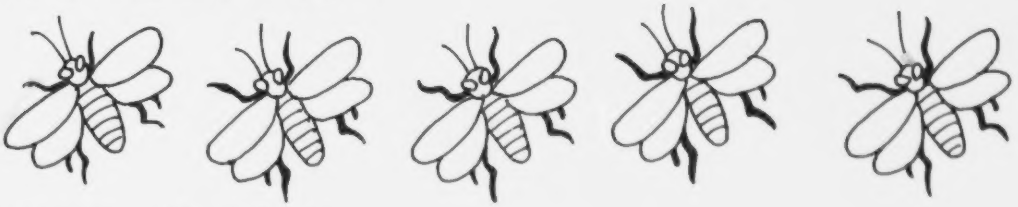
Circle the 1st bear.



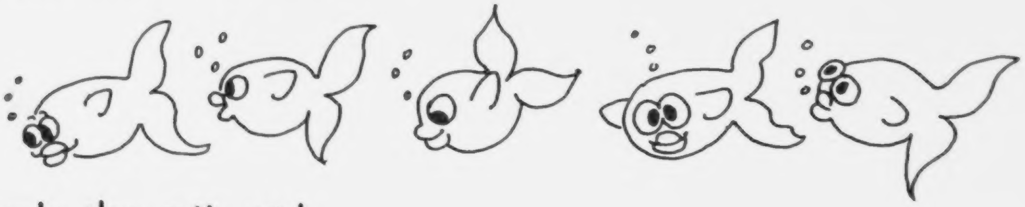
Circle the 2nd dog.



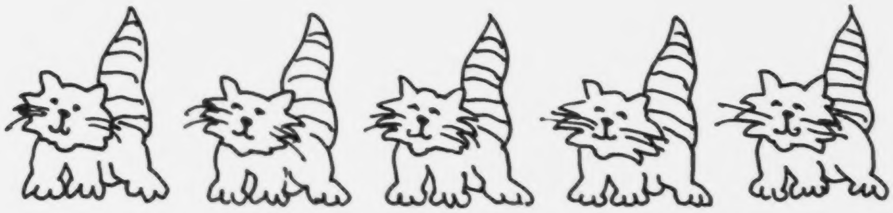
Circle the 3rd insect.



Circle the 4th fish.



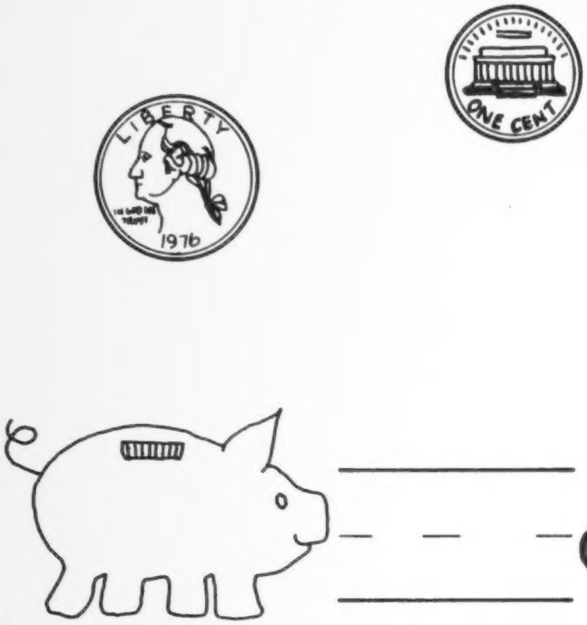
Circle the 5th cat.



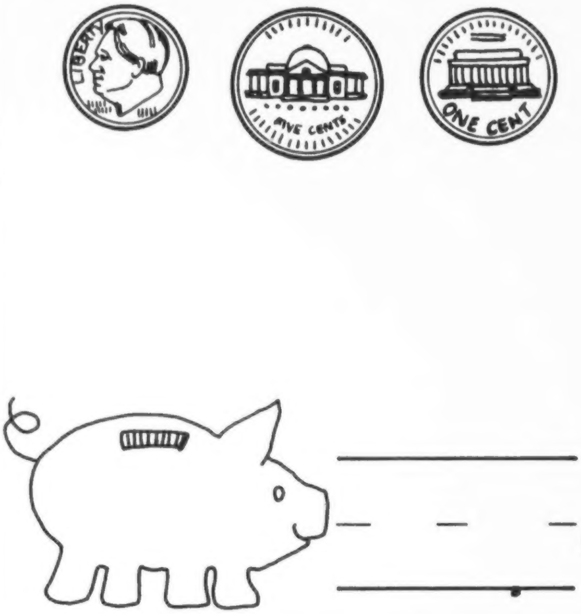
Name ______________________________

Astra's Magic Math Unit 16 Homework

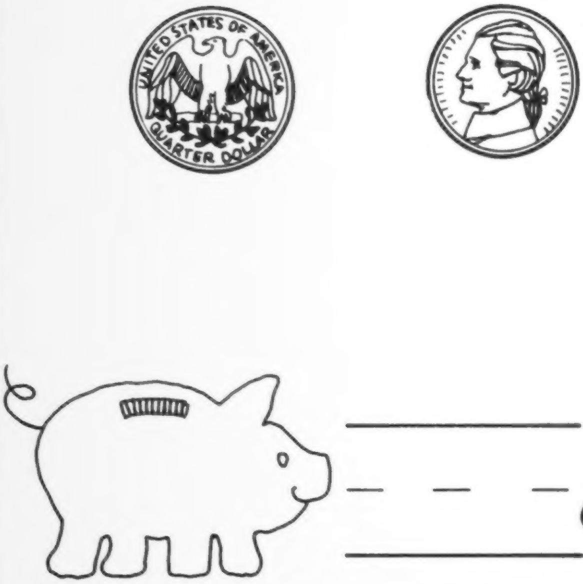
I need to count the coins and write the correct amount.


LIBERTY
1976
ONE CENT

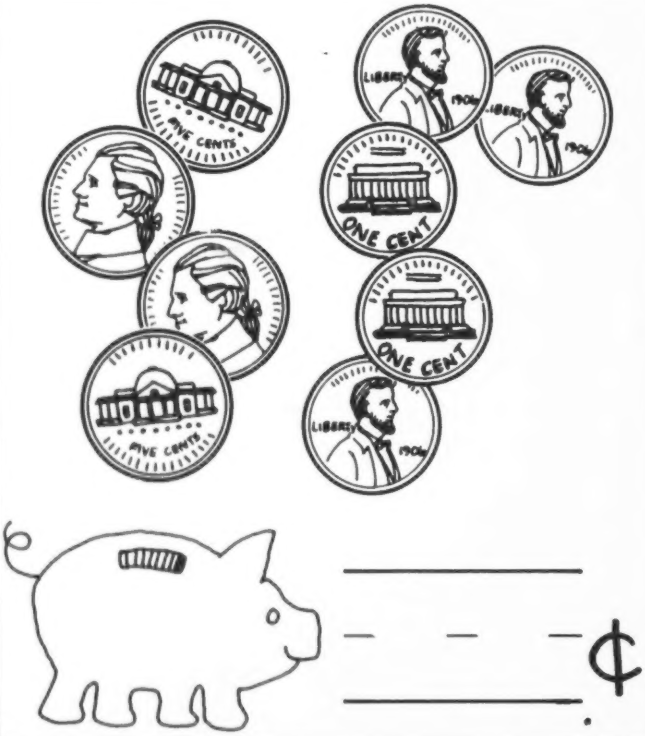
¢


LIBERTY
FIVE CENTS
ONE CENT

¢


UNITED STATES OF AMERICA
QUARTER DOLLAR

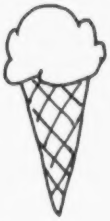
¢

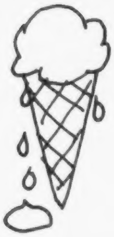

FIVE CENTS
LIBERTY
ONE CENT

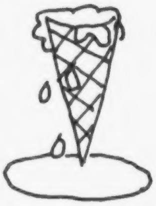
¢

Name

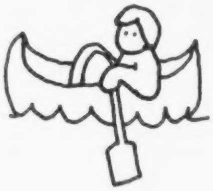
Please help me draw pictures for before, after and between.

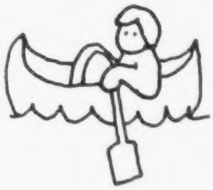


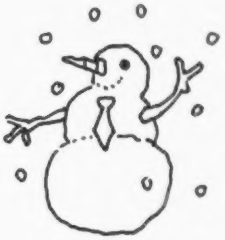


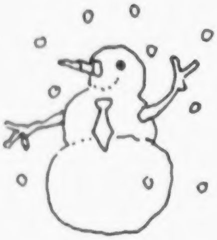


before

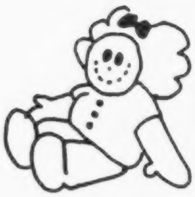




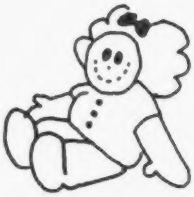




after



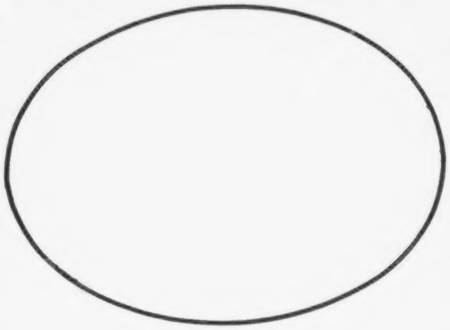
between

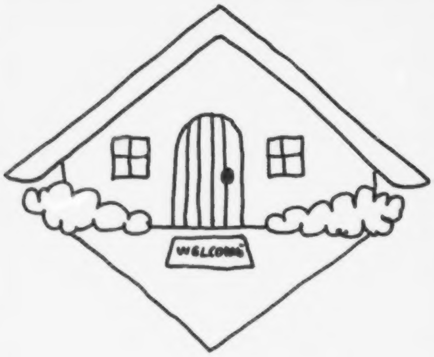


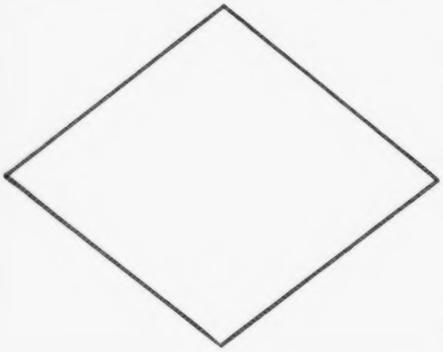
Name

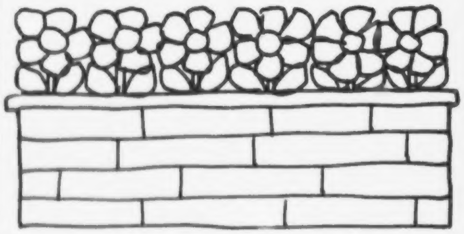
Astra's Magic Math **Unit 18 Homework**

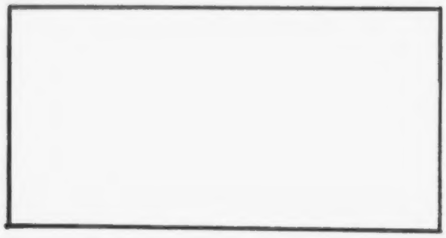
I need to cut and paste the shapes to match.

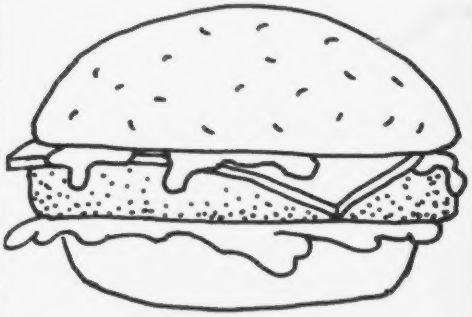








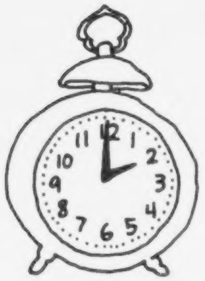


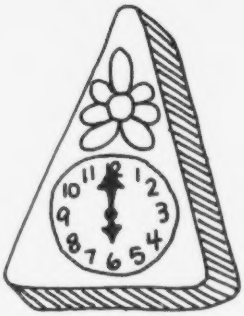


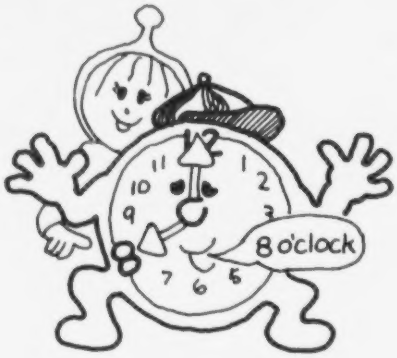
Name

Astra's Magic Math Unit 19 Homework

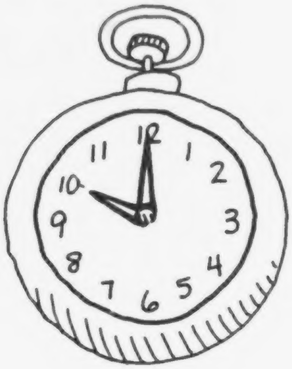
I need to know what time each clock says.

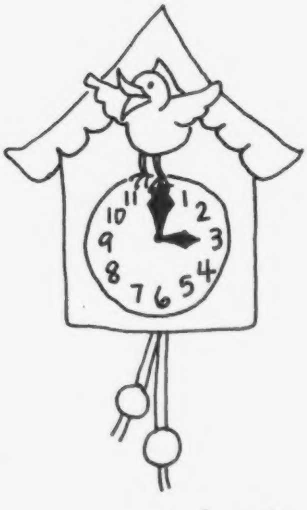


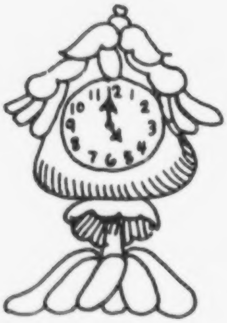




____ o'clock ____ o'clock ____ o'clock



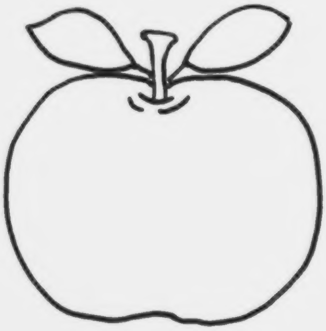


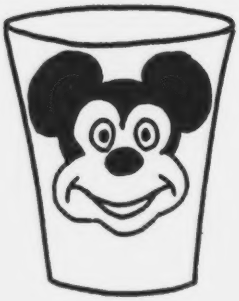


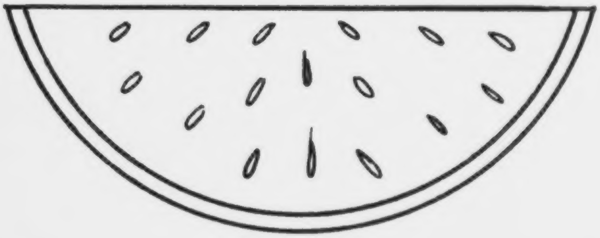
____ o'clock ____ o'clock ____ o'clock

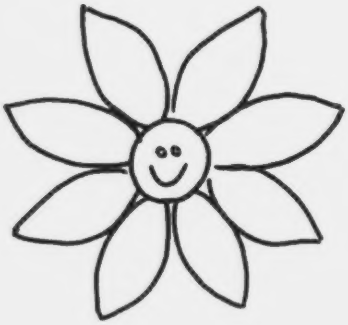
Name______________________________

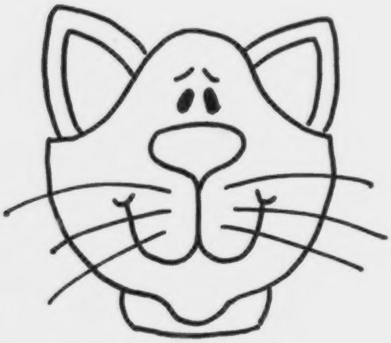
Astra's Magic Math **Unit 20 Homework**

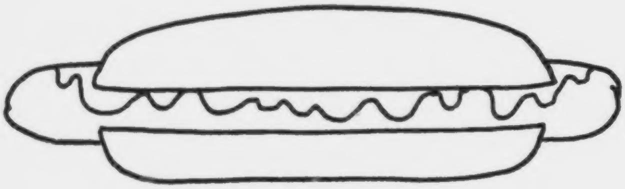


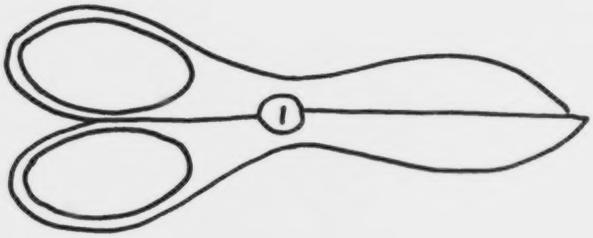


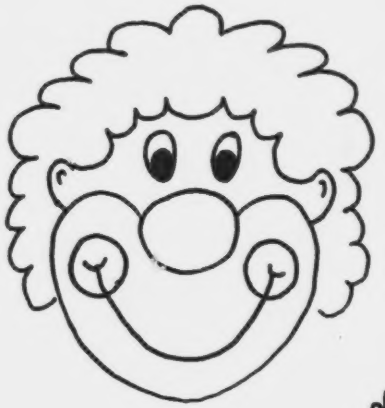








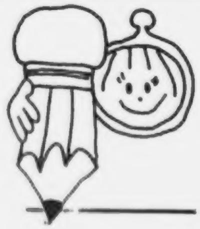




Name ____________________

Astra's Magic Math Unit 21 Homework

I need to add the numbers and write the answers.



3 + 2 = ___

0 + 5 = ___

4 + 1 = ___

2 + 2 = ___

3 + 0 = ___

2 + 1 = ___

2 + 3 = ___

1 + 4 = ___

1 + 3 = ___

4 + 0 = ___

Name ______________________________

Astra's Magic Math **Unit22 Homework**

I need to subtract the numbers and write the answers.

5-3= ____

3-0= ____

4-2= ____

4-1 = ____

5-0= ____

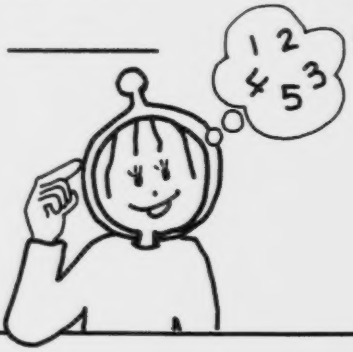
5-4= ____

3-2= ____

4-0= ____

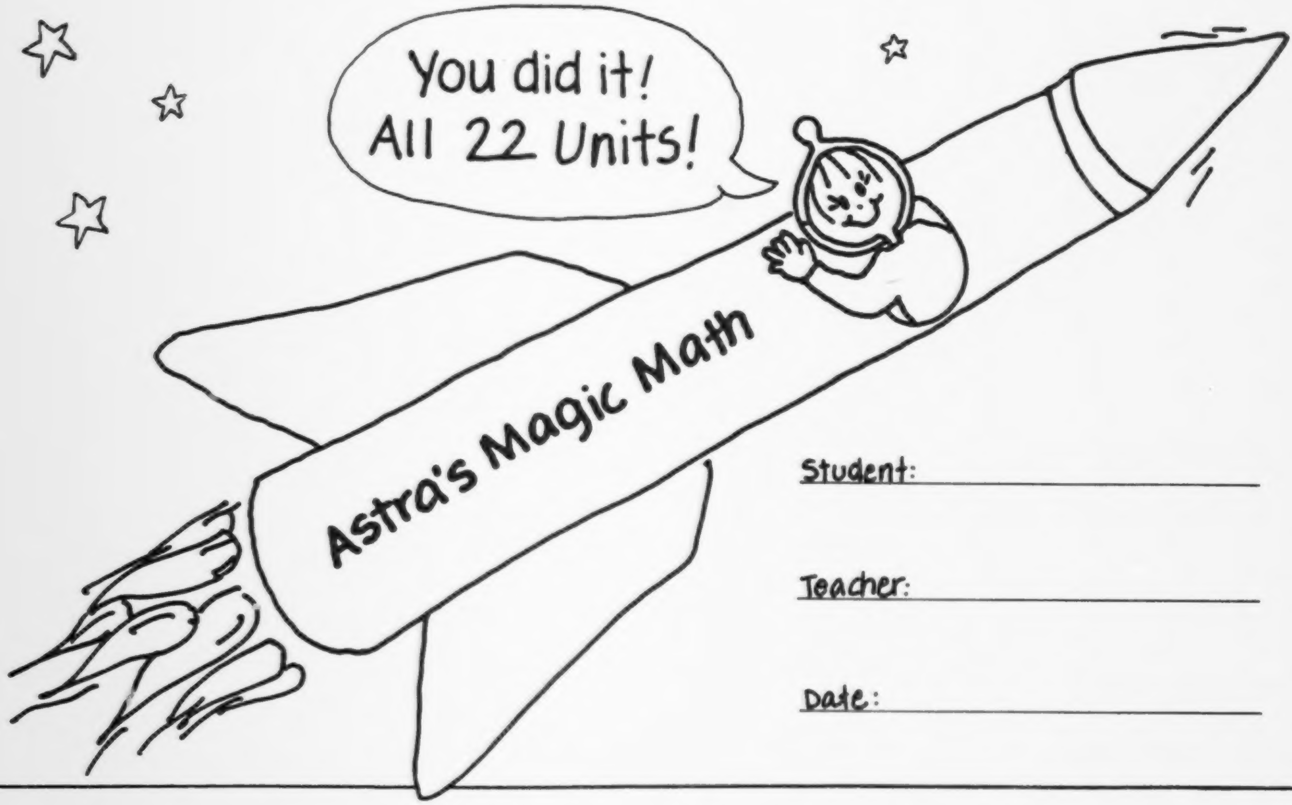
2-1 = ____

3-3= ____



Name ____________________

Certificate of Completion

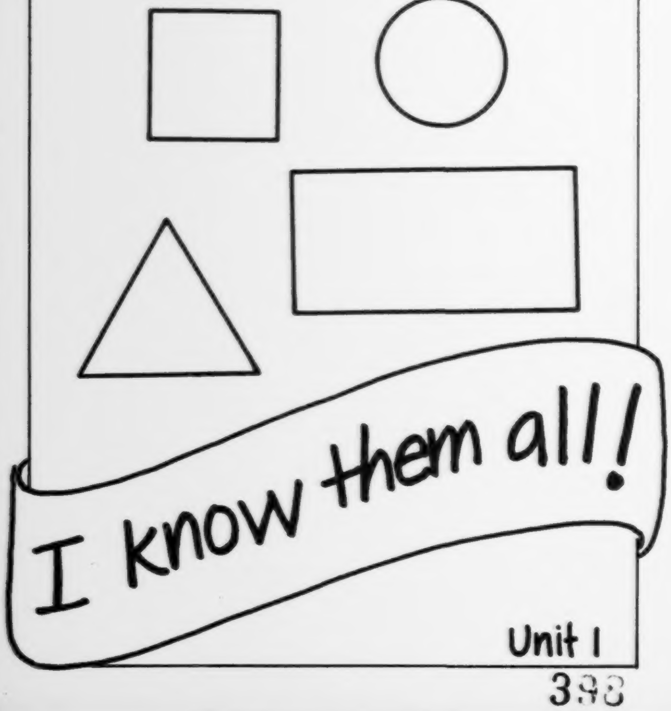

You did it!
All 22 Units!
Astra's Magic Math

Student: ____________________

Teacher: ____________________

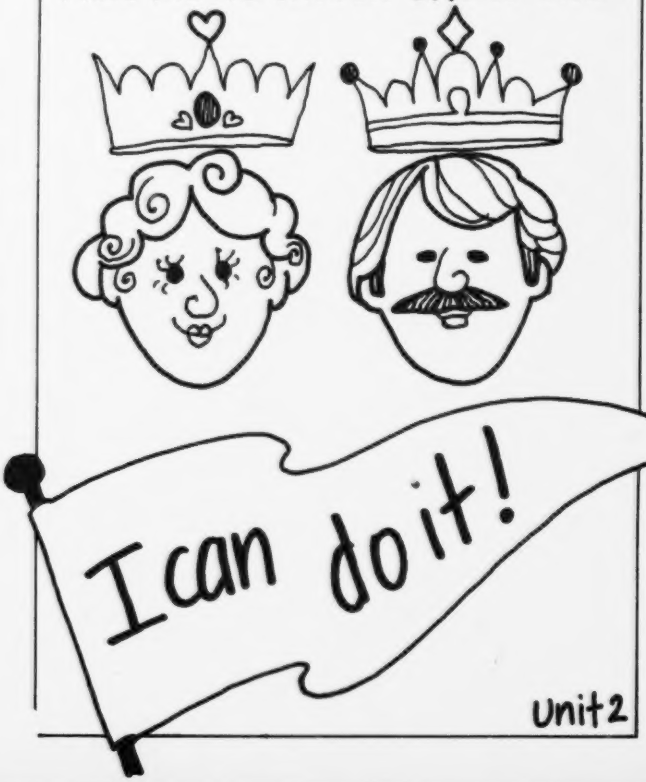
Date: ____________________

Ask me these shapes


I know them all!

Unit 1

Ask me to match one-to-one



Unit 2

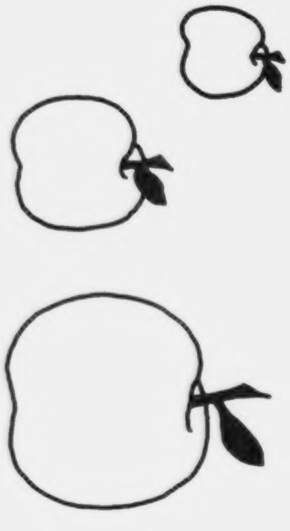
Ask me to write the numbers.

0 1 2 3 4 5

I can do it!

Unit 5

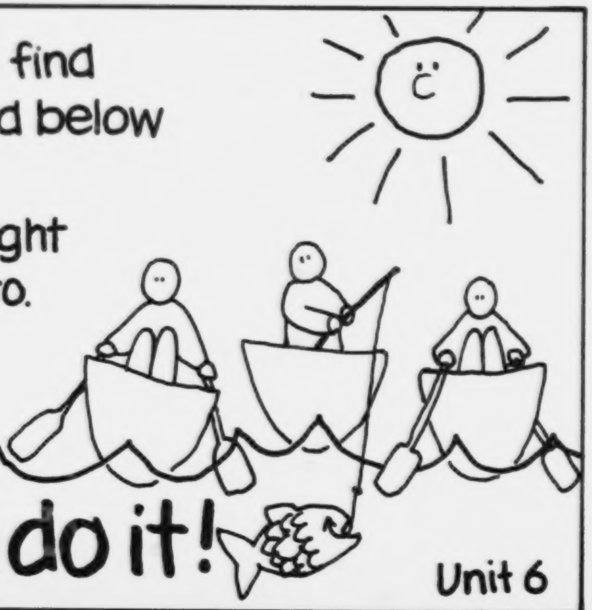
Ask me the size



I can tell you!

Unit 3

Ask me to find above and below between left and right and next to.



I can do it!

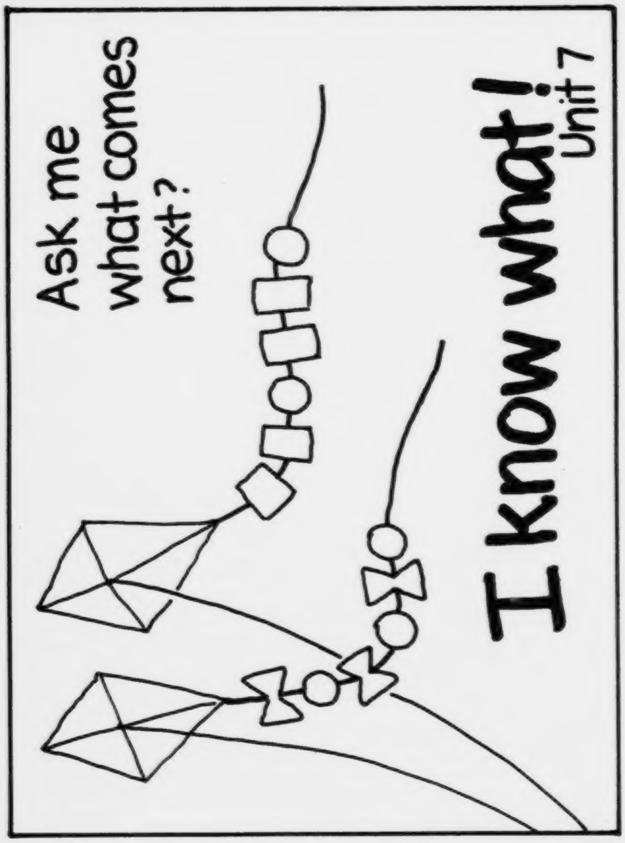
Unit 6

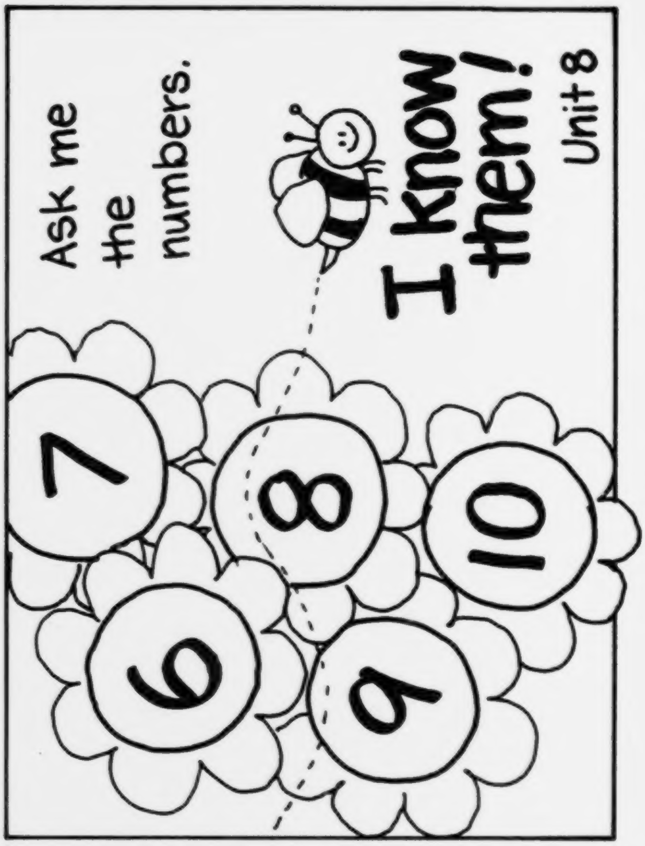
Ask me the numbers

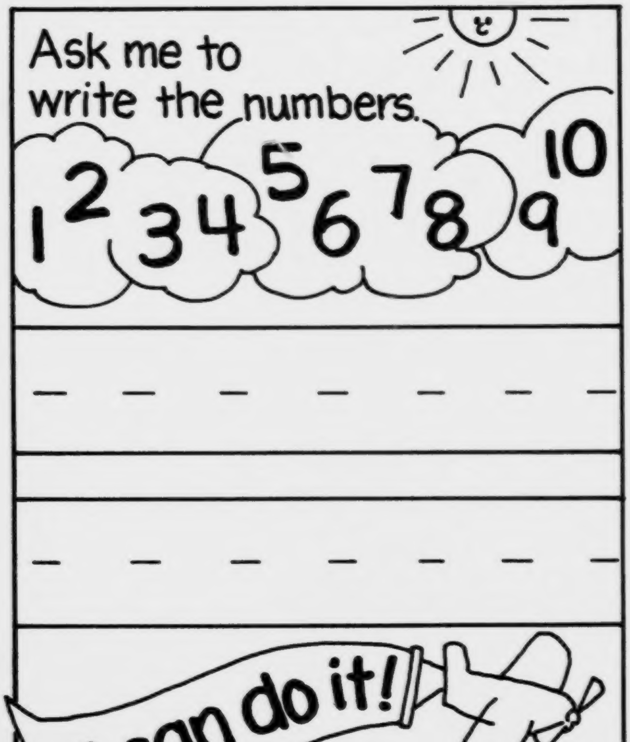
1 5 3 2 4 0

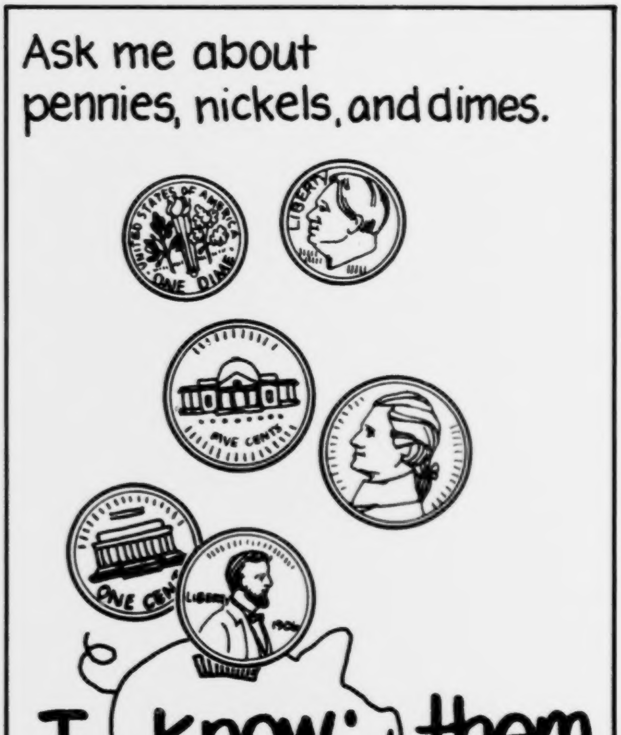
I know them!

Unit 4

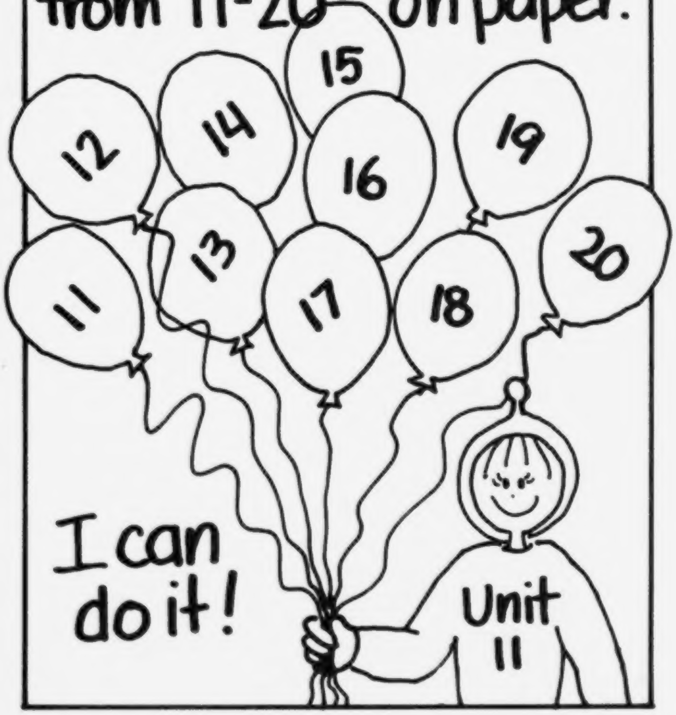

Ask me
what comes
next?
I know what!
Unit 7


Ask me
the
numbers.
I know
them!
Unit 8
7
8
10
6
9


Ask me to
write the numbers.
1 2 3 4 5 6 7 8 9 10
I can do it!
Unit 9

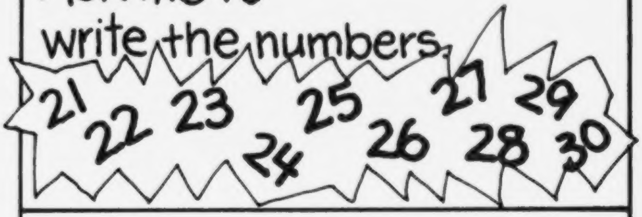

Ask me about
pennies, nickels, and dimes.
I know them.
Unit 10

Ask me to write from 11-20 on paper.


12
15
14
19
16
13
20
11
17
18
Unit 11

I can do it!

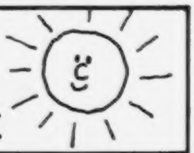
Ask me to write the numbers.


21
22
23
24
25
26
27
28
29
30

I can do it.

Unit 12

Ask me how to fill in the calendar.

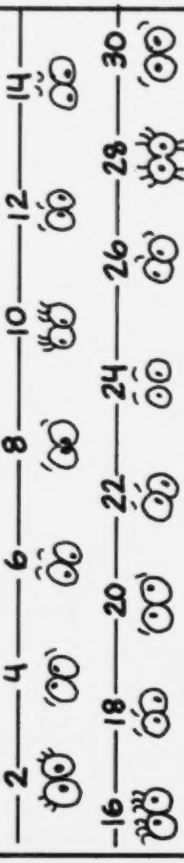


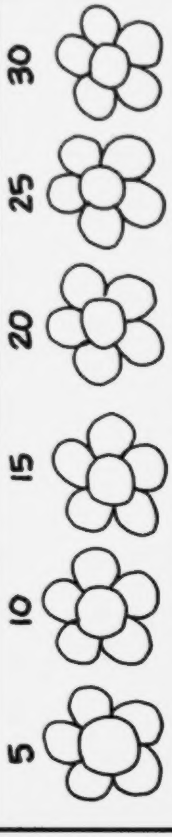
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

I can do it!

Unit 13

Ask me to count by 2's and 5's to 30.


2
4
6
8
10
12
14
16
18
20
22
24
26
28
30


5
10
15
20
25
30

I know how to do it!

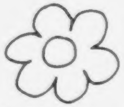
Unit 14

Ask me what comes before,

___ 5

between,

18 ___ 20



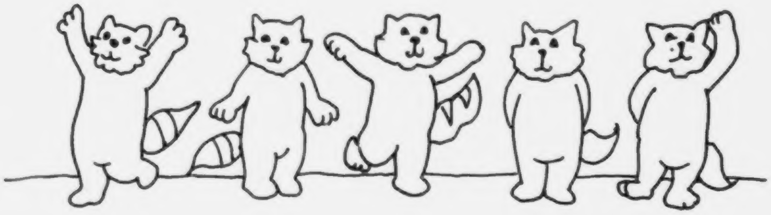
and after.

16 ___

I can tell you!

Unit 17

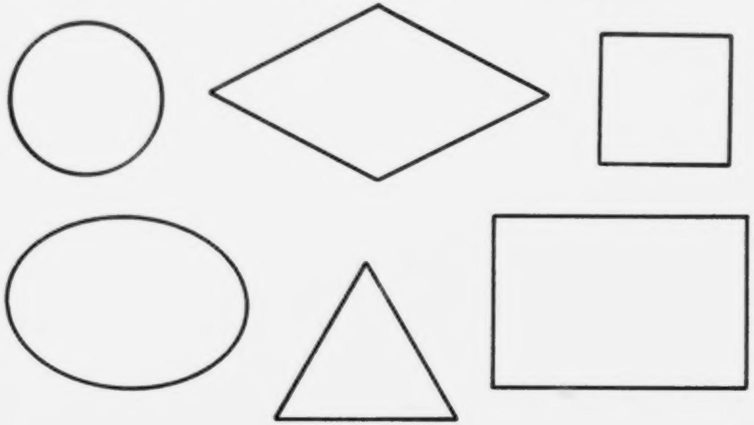
Ask me to show you 1st, 2nd, 3rd, 4th, and 5th.



I can do it!

Unit 15

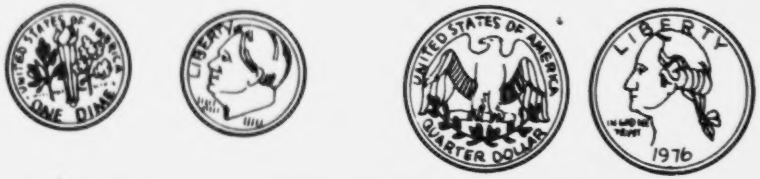
Ask me to name the shapes.



I know them!

Unit 18

Ask me about

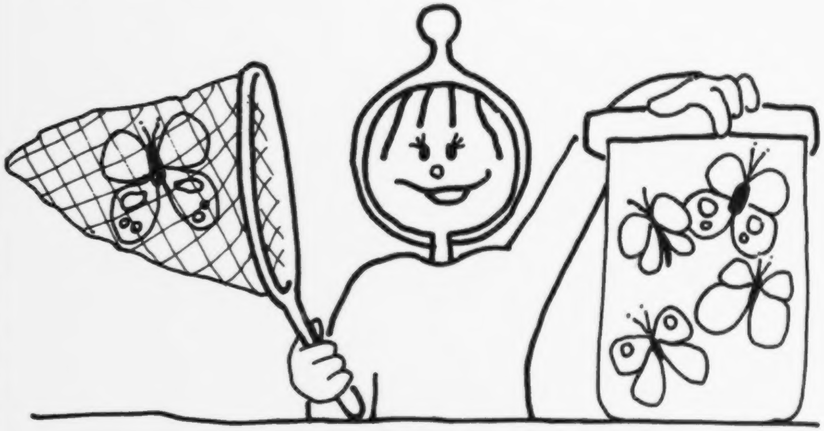

UNITED STATES OF AMERICA
ONE DIME
LIBERTY
UNITED STATES OF AMERICA
QUARTER DOLLAR
LIBERTY
IN GOD WE TRUST
1976

dimes and quarters.

I know them!

Unit 16

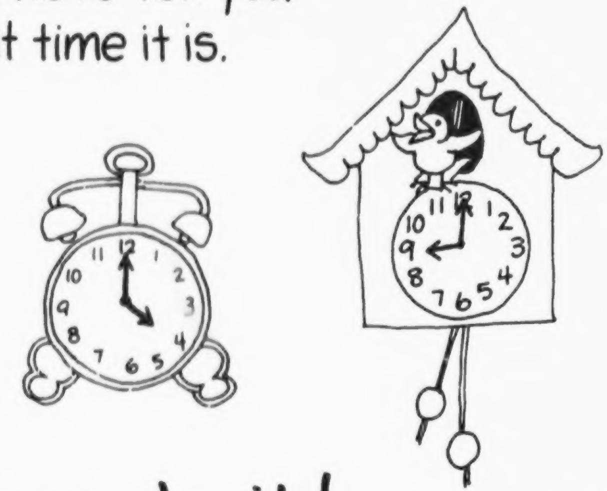
Ask me to add numbers to 5.



I can do it!

Unit 21

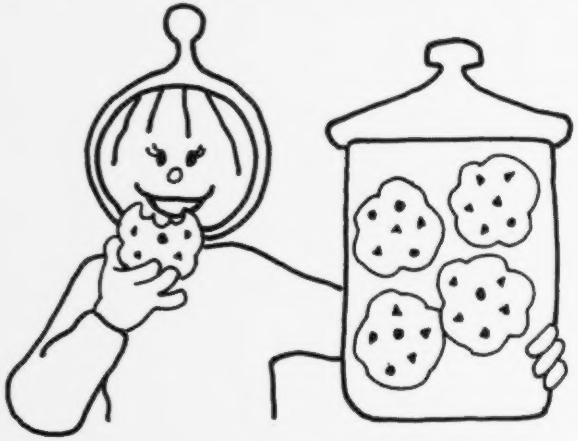
Ask me to tell you what time it is.


11
12
1
2
3
4
5
6
7
8
9
10
11
12
1
2
3
4
5
6
7
8
9
10

I can do it!

Unit 19

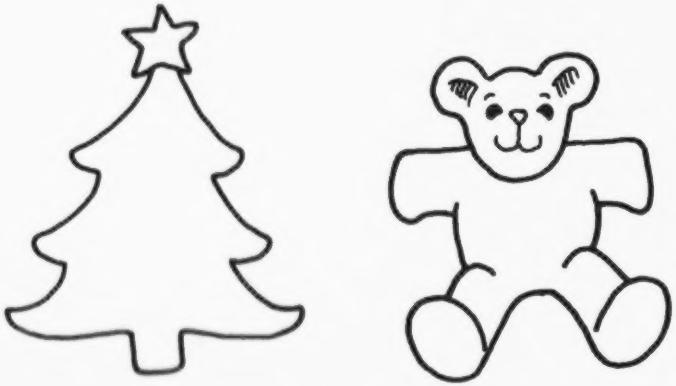
Ask me to subtract numbers.



I can do it!

Unit 22

Ask me to divide these in half.



I can do it!

Unit 20